University of Alberta

A Case Study of the Assessment Practices and Beliefs of Teachers Employing the Project Approach in a Kindergarten in the Republic of Korea

by

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This thesis is dedicated

To my parents, Woo-Choon Hwang and Soo-Ja Choi,

for their unconditional support of my educational journey since I was born.

To my wife, Eun-Ha Yang,

for her endless love, encouragement, and all her patience during my work on my thesis.

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for his understanding of my work and patience as a two-year-old boy.

Abstract

The project approach is a popular teaching-learning method in the Republic of Korea and is widely used in kindergartens in that country. However, while kindergarten teachers in the Republic of Korea generally state their support for this approach to education, they also say that they lack adequate knowledge for its implementation in line with the descriptions of it in Western literature. The purpose of this study was to help teachers bridge the gap between the theoretical foundation of the project approach and teachers' practice of it in the field of early childhood education in the Republic of Korea. The focus was the process of kindergarten teachers' understanding and use of assessment in the context of the project approach.

The research employed a case-study approach. In order to understand assessment in relation to different teachers' experiences of the project approach in the Republic of Korea, two kindergarten teachers implementing the project approach were selected: one who had a great deal of experience with the project approach and another who had little prior experience with it. The data were collected over the period of one project with each of the two teachers, by using observation, interviews, a review of the teachers' anecdotal records, and field notes. The interpretation and coding of the data were ongoing and based on an analysis of the research literature on assessment and on the perception of the teachers about what they knew and needed to know about the project approach as a context for children's learning.

An analysis of the responses resulting from the sets of data from interviews, observations, and anecdotal records resulted in findings related to the research question: How do teachers undertaking the project approach in the Republic of Korea perceive and

use assessment? The results indicate that the two kindergarten teachers who participated in this study used various forms of assessment in the project approach. Both used their students' work such as the writings, drawings, and constructions from an entire project as materials to assess the students' abilities and determine the students' status as well as the progress of their overall development. In addition, the teachers used anecdotal records to assess the students' learning activities during project work. Other forms of assessment included worksheets for improving the students' understanding of new knowledge related to a project's topic; students' self-evaluations presented either orally or in written form to assess factors such as their literacy, ability to express themselves by speaking and drawing, and basic attitudes; and a checklist made by the teacher to meet the National Kindergarten Curriculum's requirements for developing basic knowledge and skills for each development level and subject area.

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TABLE OF CONTENTS

Page

CHAPTER 1: A Case Study of the Assessment Practices and Beliefs of Teachers Employing the Project Approach in a Kindergarten in the Republic of Korea

Introduction 1

Statement of the Problem 3

Research Questions 3

CHAPTER 2: Background to the Study and Literature Review

Introduction 4

Kindergartens in the Republic of Korea 5

A Growing Need for Early Childhood Education 9

The Kindergarten Curriculum in the Republic of Korea 13

The Academic Focus of Kindergartens in the Republic of Korea 17

Rethinking Kindergarten Education in the Republic of Korea 20

Rethinking Assessment 21

Documentation 27

Rethinking the Curriculum Approach 32

The Structure of the Project Approach 36

The Transfer of Educational Ideas 41

Cross-National Attraction 41

Decision 41

Implementation 42

Internalization/Indigenization 42

CHAPTER 3: The Method of the Study

Design 43

Research Setting 45

Participants 46

Data Collection 50

Interviews 50

Observation 51

Field Notes 52

Anecdotal Records 52

Data Analysis 54

Ethical Considerations 56

CHAPTER 4: Analysis of Data - Interviews

Introduction 57

The Teachers' Understanding and Practices of Assessment 57

Assessment Practices before Getting a Project Started 58

Assessment Practices during a Project 61

Assessment Practices after Completing a Project 69

CHAPTER 5: Analysis of Data - The Map Project

Introduction 76

Teachers' Preliminary Planning 76

Selecting a Topic 76

Discussion among Teachers 77

The Activities in the Map Project 77

1. Children's Previous Experiences 78

2. Investigation outside the Kindergarten 80

3. Focusing on Children's Sense of Direction 82

4. Focusing on Reading a Map 87

5. The Concept of Direction 91

6. Finding a Specific Place by Using a Map 94

7. Making a Map 97

CHAPTER 6: Analysis of Data - Anecdotal Records

Introduction 102

Amy's Anecdotal Notes 104

A Drawing after the First Investigation outside the Kindergarten 104

Focusing on Children's Sense of Direction 112

Discovering an Intersection 115

Selecting a Destination for the Field Trip by Using a Map 120

Betty's Anecdotal Notes 124

A Draft of the Drawing after the First Investigation outside the Kindergarten .. 124

Focusing on Children's Sense of Direction 128

Discovering an Intersection 133

Selecting a Destination for the Field Trip by Using a Map 137

CHAPTER 7: Discussion of the Findings and Implications for Further Research and Practice

Introduction 142

Findings and Limitations of the Study 142

Findings 142

Limitations of the Study 144

Discussion of the Findings 145

Forms of Assessment Depending on the Teacher's Experiences with the Project Approach 146

Alternative Assessment Methods 148

Teacher-Training Programs 150

The Teacher's Efficient Use of After-School Hours 152

The Teacher's Relationships with Students' Parents 153

The Relationship between the Project Approach and the Official Curriculum .. 154

The Korean Version of the Project Approach 155

Implications for Further Research and Practice 157

Children's Drawings 157

The Relationship between Kindergarten Teachers and Grade One Teachers 158

References 159

Appendices

A. Interview Questions 169

B. Evaluation Sheet for the Map Project (*Inquiry*) 171

C. Checklist for the Map Project (*Inquiry*) 173

D. Information Letter to Teachers 175

E. Information Letter to Parents 178

F. Information Letter to Students 181

G. Research Consent Form for Teachers 183

H. Research Consent Form for Parents 185

LIST OF TABLES

Table Page

1. Percentage of Students Entering a School of the Higher Grade Levels in the Republic of Korea 5
2. Number of Kindergartens and Day-care Centers in the Republic of Korea 12
3. Rate of Attendance in Kindergartens in the Republic of Korea 12
4. Components and Aims of the Kindergarten Curriculum in the Republic of Korea 14
5. Amy's and Betty's Similar and Different Ideas Concerning When, What, and How to Assess 73
6. Amy's and Betty's Assessment Strategies and Characteristics of Assessment for Project Work 148

LIST OF FIGURES

Figure Page

1. Kindergarten Curriculum Organization and Management in the Republic of Korea 17
2. A Child's Drawing after the First Investigation outside the Kindergarten 80
3. My Left and Right Hands 84
4. A Worksheet for Right and Left Directions 85
5. The Students' Drawings of an Intersection 89
6. A Plan for the Field Trip 95
7. A Drawing after the Field Trip 98
8. Kevin's Drawing after Looking Around outside the Kindergarten 109
9. Sarah's Drawing of an Intersection 117
10. Chris's Drawing after Looking Around outside the Kindergarten 125
11. Chris's Drawing of a Route to the City Hall 140

CHAPTER 1

A Case Study of the Assessment Practices and Beliefs of Teachers Employing the Project Approach in a Kindergarten in the Republic of Korea

Introduction

The project approach is a popular teaching-learning method in the Republic of Korea and is widely used in kindergartens in that country.[1] According to Katz and Chard (2000), proponents of this approach in North America emphasize the investigation of a topic the students are curious about. However, while Korean kindergarten teachers generally state their support for this approach to education, they also say that they lack adequate knowledge for its implementation in line with the descriptions of it in Western literature. As a result of my prior research (Hwang, 2000) and conversations with several teachers who used the project approach, I identified concerns about (a) the assessment of students using the project approach, (b) the appropriate means of record keeping, and (c) the use of information resulting from assessment for evaluating students' performance. In my Master's study, I recognized that kindergarten teachers were curious about appropriate assessment methods in the project approach, a topic on which little information was available in Korea. The aim of the present study was to help teachers to bridge the gap between the theoretical foundation of the project approach and teachers' practice of it in the context of early childhood education in Korea in order to support

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[1] The context of the study is the Republic of Korea. Subsequent references in the text to "Korea" are to this nation, except where noted otherwise.

teachers in guiding children in their experience of the project approach and enhance children's learning.

According to Leavitt and Eheart (1991), the purpose of assessment in early childhood programs is "to help caregivers and parents better understand, appreciate, and respond to the growth, development, and unique characteristics of each child in their care" (p. 4). For Leavitt and Eheart, assessment is the ongoing appraisal of the development of young children and a process for understanding as well as promoting the uniqueness of each child. Through the assessment process, teachers can "(a) promote children's learning and development, (b) identify children for health and special learning services, (c) monitor trends and evaluate programs and services, and (d) assess academic achievement and hold individual students, teachers, and schools accountable" (Shepard, Kagan, & Wurtz, 1998, p. 52). According to the National Association for the Education of Young Children's (NAEYC) position statement on Developmentally Appropriate Practice (Bredekamp & Copple, 1997), assessment information "that is integrated with curriculum planning" (p. 21) reflects progress toward improving teaching and learning. Moreover, because the methods of assessment depend on a student's age and experiences, the assessment of young children relies on descriptive data, students' representative performances and work, and observations of students' behaviours. Within descriptions of the project approach, assessment is important but largely undefined. For example, according to Chard (1992), assessment will help teachers to develop the project approach and to get an idea of "aspects of [a student's] skill and understanding" (p. 61).

Statement of the Problem

The purpose of this study was, therefore, to investigate the actual assessment methods used by teachers employing the project approach with students in kindergartens in Korea. In particular, this thesis is intended to explore how these teachers assess students' performance to support their overall development. An additional purpose was to improve understanding of assessment within the project approach in general.

I believe that this research has the potential to help teachers to improve their understanding of how to assess students' performance when using the project approach. Although this research was limited to two teachers' experiences of assessment while using this approach, I believe that the study may help other teachers to develop their own guidelines for assessing students' performance when using the project approach. Teachers can also extend the framework of assessment to the whole range of students' learning activities in the curriculum. Furthermore, this research may contribute to teacher education related to assessment in early childhood education.

Research Questions

The main research question is the following: How do teachers undertaking the project approach in the Republic of Korea perceive and use assessment? Related guiding questions are

1. What forms of assessment are used with young children in the project approach in the Republic of Korea and elsewhere?
2. How is information resulting from assessment used to evaluate students' performance in light of the official Kindergarten Curriculum in the Republic of Korea?

CHAPTER 2

Background to the Study and Literature Review

Introduction

In order to contextualize kindergarten education in Korea and the place of the project approach and assessment, the following sections describe the development of a system of schooling in Korea in modern times, and the current factors influencing early childhood education. This chapter concludes with a review of how kindergarten education in Korea is being reconsidered in light of child-centered practices.

Although the first modern school system was introduced in the 1880s into Korea, the 6-3-3-4 structure was not established by Korean Education Law until the 1940s (Ministry of Education and Human Resources Development, 2002). The system consists of six-year elementary schools, three-year junior high schools, three-year high schools, and four-year colleges and universities. In 1953, compulsory education was introduced, and a six-year elementary education program was made free and compulsory (Ministry of Education and Human Resources Development). Currently, the Korean government is extending free education, allowing students to attend the three-year junior high school at no cost. The new policy is being introduced for all students who have completed elementary education.

Korean parents' expectations for their children's schooling are very high, and the enrollment rate for junior high school reached 99.9% at the start of the twenty-first century (see Table 1) (Ministry of Education and Human Resources Development, 2003). Likewise, most students (99.7%) graduating from a junior high school go on to receive a high school education. Ninety percent of students who graduate from an academic high

school enroll in a university-level institution such as a college, a university, or a university college. In contrast, 57.6% of students graduating from an industrial high school enter a university-level institution, while the remainder enters the workforce.

Table 1

Percentage of Students Entering a School of the Higher Grade Levels in the Republic of Korea

Elementary School ↓ Junior High School	Junior High School ↓ High School	Academic High School ↓ University Level Institution	Industrial High School ↓ University Level Institution
99.9%	99.7%	90.1%	57.6%

Note. From *Statistical Yearbook of Education* (2003), Ministry of Education and Human Resources Development, Republic of Korea

Kindergartens in the Republic of Korea

Japanese and Christian missionaries established Western-style kindergartens in Korea in the late nineteenth century.[2] The first kindergarten was established for Japanese children in 1897. During the 35-year period when Korea was controlled by Japan (1910-1945), Korean society was opened up to Japanese and Western culture. An American missionary established the first kindergarten for Korean children sometime between 1910 and 1920, and in 1922, the first regulations for kindergarten education were legislated. Their emphasis was on the care of three- to seven-year-old children, with the role of teachers being to develop children's balanced mental and physical health in order to build healthy and safe living habits. The activities for young children included playing, singing,

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[2] Korea at this time was comprised of what is now known as the "Republic of Korea" and the "Democratic People's Republic of Korea."

talking, and writing. One teacher was to be responsible for up to 39 children (Lee, 1992). These remained the only legal regulations for kindergarten before the enacting of the Education Law in the 1940s (Lee). In terms of curriculum, until Korea regained its independence in 1945, educational theories and kindergarten programs were influenced by American theories and curricula as interpreted by American missionaries (Lee).

Although the Korean government enacted the Education Law in the late 1940s, the Korean War (1950-1953) prevented most children from immediately attending school. During the War, educators were unclear about what the educational system should be like. After the War, Korean society stabilized, and kindergartens based in churches were established. In the late 1950s, systematic educational programs and materials were introduced in kindergartens, but no Korean research on early childhood education existed (Lee, 1993).

By 1965, Korea had a total of 423 kindergartens (Ministry of Education and Human Resources Development, 2003) serving a small minority of children of suitable age: "only 2% of eligible children in the 1960s attended kindergarten and most of them were Christian" (Lee, 1993, p. 7). One reason for the low numbers was that at that time, most Koreans did not see the value of kindergarten education. However, since 1969, when the Korean government enacted the first law determining the kindergarten curriculum, early childhood education has developed rapidly. Various institutions such as public and private kindergartens, and day-care centers mushroomed to serve young children in the 1970s. In 1981, in the interest of social reform and to reach children who were being left out of preschool programs, the Korean government established *Saemaul* (New Village) nursery schools for the children of low-income families. *Saemaul* schools

were designed to serve three- to five-year-old children, with priority given to those children who had a wage-earning mother. The purpose was similar to that of the Head Start initiative in the United States (Bailey & Lee, 1992). At the end of the 1980s, *Saemaul* nursery schools were combined with day-care centers.

In the 1980s, academic and technical skills were emphasized in early childhood education as a bridge to prepare for elementary education, and Korean kindergarten education focused on the teaching of the 3R's (reading, writing, and arithmetic) by using teacher-directed methods (Lee, 1992). Korean kindergarten education excluded young children's play and focused on preparing children for formal schooling. Like educators, parents of young children also wanted that their children to acquire academic skills in a kindergarten to enhance their achievement in elementary school.

Since the 1990s, the tendency of early childhood education in Korea has moved from a focus on the rote memorization of information to a focus on individual children's learning in a developmentally appropriate manner (Lee, 1997). Teaching methods are now more influenced by the environment, teachers, parents, and children than these methods were previously. Currently, Korean educators in early childhood education believe that children naturally learn through their experiences and their interest in their environment, and the kindergarten curriculum reflects this belief by stressing activity-centered or learner-centered teaching methods. According to Krogh (1995), in the exploration of learning activities, children "unconsciously integrate subject areas into a complex whole based on their current interests" (p. 83). Teachers wishing to facilitate this method of learning include equal doses of health, society, expression, language, and inquiry in the kindergarten curriculum (Krogh). In addition, Korean parents of both

typically and atypically developing children demand integrated curricula and programs focused on children's experiences (Chung, 1999). The question remains, however, whether assessment practices have shifted from readiness testing to a more holistic assessment method aimed to support children's development.

Currently, as a way of assessing and supporting children's development, some kindergartens provide their students with a packaged curriculum called the 'Gifted and Talented (G & T) program.' The G & T program was developed by a private early childhood education institution. This institution was established to research and create early childhood programs to help Korean children to develop their abilities (Future Early Childhood Education Research Institution, 2004). The program has two levels, one for five-year-old children and one for six-year-old children. It consists of five components: *Creativity*, *Sensory Skills*, *Science*, *Thought*, and *Literature*. Each component includes eight phases. Students complete Phase One to Four during the first term and Phases Five to Eight during the second term. In addition, the program includes three evaluation tests. The students are examined before the beginning of the first term, at the end of the first term, and at the end of the second term.

The students' work from the G & T program is collected by the institution, and its researchers assess the students' work by using their own standards of assessment. They then mail a written report of their assessment to the kindergarten. The teachers refer to this report to understand each student's developmental level and keep this report until the end of the school year.

The kindergarten teachers who work with the G & T program have a teacher's manual and guidelines for evaluation provided by the institution, and the teachers can

refer to them when evaluating their students' development level according to the three tests. The teachers mark the three exams according to the guidelines. After marking, the teachers write a letter of evaluation by using the guidelines provided. They then send a letter at the end of each term to the students' parents, reporting the grade received in each subject area: *excellent, very good, good, able to be developed*, and *need for endeavour*. As well, the letter provides three different comments for the overall evaluation of the students' development.

According to the Ministry of Education and Human Resources Development (2003) in Korea, the average teacher-student ratio in kindergarten was, nationally, 1:18 in 2003. This ratio was 1:14 in 1965 and increased until it was 1:33.9 in 1985. As the Korean government encouraged early childhood education in the early 1980s, the number of kindergartens as well as students was increased. Since 1985, the teacher-student ratio in kindergarten has decreased because of an increase in the number of kindergartens and a decrease in the birth rate.

A Growing Need for Early Childhood Education

Cochran's (1993) framework for examining early childhood education systems in a national context is useful here for understanding the interconnections among the different social forces at work in Korea, and their influence on kindergarten. According to Cochran, child care and education policies and programs are influenced by various casual factors and mediating influences. For example, urbanization and industrialization bring about not only loss of traditional family roles and structures but also changes in women's social and economic position (Cochran). In Korea, a rapid change in these areas resulted in a greater need for child-care spaces, with kindergartens as well as day-care centers

filling the need. Furthermore, cultural, social, political, and economic influences act as filters between the causal factors and policy and programs outcomes (Cochran). As concerns for high-quality center-based child care and education increased in Korea, a "custodial-educational curriculum" (Cochran, p. 642) was developed in kindergartens and day-care centers.

Most families in Korea have traditionally had a nuclear and extended family structure in which parents and grandparents have played an active role in child rearing. However, during the 1980s, the traditional family structure noticeably eroded as Korean society rapidly urbanized and industrialized (Lee, 1993). As well, the number of mothers who had young children and worked outside the home increased. A major reason for women working, in addition to wanting to contribute to the family income, is for their self-fulfillment. Most Koreans, thus, recognized the necessity of education for young children, and interest in early childhood education increased in the 1990s. In other words, like the women's social movements in many other nations, the women's movement in Korea influenced young children and early childhood education (Goffin & Wilson, 2001). In Korea, as the percentage of employed mothers with young children including infants and toddlers has increased, the quality of the early childhood programs serving them has become an important social issue (Lee, 2002).

According to Hwang (2003), 45.1% of married wage-earning women in Korea have no children, while 25.7% of women with children under the age of two, and 48.3% of women with children over the age of two, work outside the home. As most women work outside their home, and as many young families live a great distance from their parents or other family members, alternative child care is required. In most cases, urban

parents send their children to a nursery facility or a kindergarten. Other institutions that have a part-time or full-time child-care function include play schools, learning academies, day-care centers, and private or public kindergartens. The most common of these facilities are kindergartens and day-care centers. Especially after the Korean government enacted *The Law of Infant and Child Care* in 1991, the institutions for young children have been largely divided between kindergartens and day-care centers (Lee, 1993). However, a kindergarten is classified an "educational facility" while a day-care center is a "nursery facility," so that while kindergartens are within the portfolio of the Ministry of Education and Human Resources Development, nursery schools are administered by the Ministry of Health and Welfare. Such a divided educational system for young children creates various administrative and other problems.

Table 2 indicates that the number of day-care centers greatly exceeds the number of kindergartens. However, the total number of children in the kindergartens is not significantly different from that in the day-care centers because a day-care center is generally smaller than a kindergarten. Most day-care centers in Korea are private and are established with personal funds. Many regulations must be met to establish a kindergarten; for example, it must have a playground of a particular size, a classroom, and other facilities; in contrast, no such regulations must be met to establish a day-care center. Thus, much less capital is required to establish and run a day-care center than a kindergarten. Moreover, the number of public and private kindergartens is similar, but the number of children is very different because most public kindergartens are smaller than private ones. While most public schools have one class for kindergarten, most private

kindergartens have more than three, with some having ten or more classes with over four hundred children in total.

Table 2

Number of Kindergartens and Day-care Centers in the Republic of Korea

	Total		Public		Private	
	Facilities	Children	Facilities	Children	Facilities	Children
Kindergartens	8,246	541,713	4,328	123,906	3,918	417,807
Day-care Centers	20,097	734,192	1,306	102,118	18,791	632,074

Note. From *Statistical Yearbook of Kindergartens* (2004) from Ministry of Education and Human Resources Development and *Day-care Centers* (2001) from Ministry of Health & Welfare, Republic of Korea

Because kindergarten education is not compulsory, the parents of the 46.9% of five-year-old children in Korea who attend kindergarten (see Table 3) pay the full cost of tuition. While tuition for private kindergarten is much higher than for public, parents believe that "the quality of the educational services including learning materials and equipment, school environments, and staff qualifications is generally higher than in the public kindergartens" (Lee, 1997, p. 7).

Table 3

Rate of Attendance in Kindergartens in the Republic of Korea

Total	Age of 3	Age of 4	Age of 5
29.1%	12.2%	27.4%	46.9%

Note. From *Statistical Yearbook of Education* (2003) from Ministry of Education and Human Resources Development, Republic of Korea

In past decades, nursery schools operating in day-care centers focused on care as opposed to education. Today, day-care centers are increasingly offering educational programs, and kindergartens and day-care centers in Korea offer similar programs for three- to five-year-olds, so that these facilities compete with one another for pupils. According to the *Statistical Yearbook of Education* (2003) published by the Ministry of

Education and Human Resources Development, 12.2% of three-year-old children, 27.4% of four-year-olds, and 46.9% of five-year-old children attend a kindergarten. In other words, 29.1% of three- to five-year-old children receive a kindergarten education (see Table 3). In addition, most of the remaining three- to five-year-old children attend other institutions such as day-care centers, private institutions, and play schools. These figures imply that parents in Korea are extremely interested in early childhood education, and that as Table 2 reveals, most facilities operate in the private domain as a user-pay service.

The Kindergarten Curriculum in the Republic of Korea

Most working parents who require out-of-home care for their young children demand a high-quality service. In turn, early childhood teachers in Korea recognize the need to develop and plan high-quality full-day programs to improve children's physical development and academic skills. In order to enhance children's social development, teachers also have to develop programs that will provide many opportunities for children to interact with their families and peers. In Korea, based on their training, early childhood teachers believe that programs must provide for the entire family's involvement. In many instances, through parent education, teachers help parents and extended family members to provide appropriately for their children.

The best way to do so, however, in terms of the early childhood curriculum, has been open to debate. Because the field of early childhood lacked its own theoretical and methodological framework, various knowledge brokers have competed for dominance. The discipline of psychology has had the greatest impact on Korean early childhood education. Since the 1930s, researchers have worked to apply psychological theories to early childhood education. This focus is still evident today, with the kindergarten

curriculum infused with diverse psychological terms such as "cognitive development," "constructivism," and "behaviorism" (Yang, 2000). In addition, because different bodies administered the kindergarten and day-care center sectors, creating a curriculum that satisfied all participants was difficult (Yang).

In 1969, the Ministry of Education in Korea enacted the first law determining the kindergarten curriculum. The Ministry revised the law approximately every five years, so that the seventh official kindergarten curriculum now applies to all kindergartens in Korea. The current kindergarten curriculum consists of five components, each focusing on giving young children the life skills needed to fit into society: *Health, Society, Expression, Language,* and *Inquiry.* The aims of each component are defined by the Ministry of Education and Human Resources Development (1998), and listed in Table 4.

Table 4

Components and Aims of the Kindergarten Curriculum in the Republic of Korea

Five Components	Aims
Health	(1) To develop children's basic abilities needed for awareness of their own bodies and their surroundings through various physical and sensory motor experiences. (2) To develop children's basic movement skills and basic physical strength by participating in physical activities. (3) To develop healthy and safe living habits by acquiring the knowledge and skills related to health and safety. (4) To maintain healthy minds by participating happily in physical activities.
Society	(1) To learn to practice good manners, follow rules, and live frugally. (2) To foster self-regulation abilities by making plans and practicing their work based on a positive self-concept. (3) To foster abilities to cooperate and live harmoniously with others through understanding of relationships. (4) To develop social-adaptation skills by taking an interest in the immediate society and environment.

Expression	(1) To develop curiosity by exploring the artistic elements in objects and nature. (2) To develop creative expression and emotional stability by expressing thoughts and feelings through various activities. (3) To develop a sense of aesthetics and an eclectic sensibility by appreciating objects, nature and various products.
Language	(1) To develop the ability to listen attentively and understand what others are saying. (2) To improve the ability to express thoughts and feelings orally. (3) To be interested in reading and writing through familiar experiences with letters and words. (4) To encourage a good attitude when listening and talking.
Inquiry	(1) To develop the ability to think scientifically about natural phenomena and their environments. (2) To develop logical-mathematical thinking ability through active manipulation of concrete objects. (3) To develop the ability to creatively investigate problems which occur in everyday life and to solve them by using a range of strategies.

In order to meet the goals of each subject in the curriculum, the Ministry emphasizes teachers' assessment of young children's performance. In the process of assessing the children's performance, teachers should (a) focus on the children's health, basic living habits, emotional and social adaptation, creative expression, and ability to communicate and investigate; (b) use a variety of assessment methods including observation, anecdotal records, portfolios, and discussion with the children; (c) understand the children's individual characteristics and developmental level and keep written records; and (d) utilize the results of the assessment to promote the children's development as a whole, the aim being to maintain effective curriculum organization and to help parents understand their children's development (Ministry of Education and Human Resources Development, 1998).

Unfortunately, the Korean government has tended to change the curriculum without first undertaking sufficient research (Yu, 2002). Moreover, the government has controlled the revision of the curriculum by continuing to consult experts outside the field of early childhood education and ignoring the major stakeholders: the teachers, students, and parents, who are directly concerned with educational institutions. As well, even before the current curriculum policy was completely implemented in the schools, the government and its experts had begun to discuss the next revisions (Yu). Teachers have not been able to keep up with all the changes, and those within the field of early childhood education in Korea believe that the government needs to better consider when to revise the curriculum, how to revise it, and who should be involved in making the revisions (Jeon, 1995).

Nonetheless, the government has implemented the kindergarten curriculum on a national level, and the Board of Education in each province and city is responsible for this curriculum's organization and administration. Each Board has established ward offices for education and kindergartens within its jurisdiction according to the government's and each Board's own guidelines for the organization and management of the National Curriculum (see Figure 1). However, even though each Board of Education provides some of the guidelines for its kindergartens, satisfying the diversity of interests at the various community, kindergarten, and individual levels while also satisfying the government's requirements is difficult. Each Ward Office of Education should be able to follow its own guidelines based on the National Curriculum for kindergartens, and each kindergarten should be able to organize and manage its own curriculum appropriate to its

individual situation. Moreover, in managing its curriculum, each kindergarten should reflect the local community's and parents' needs and characteristics.

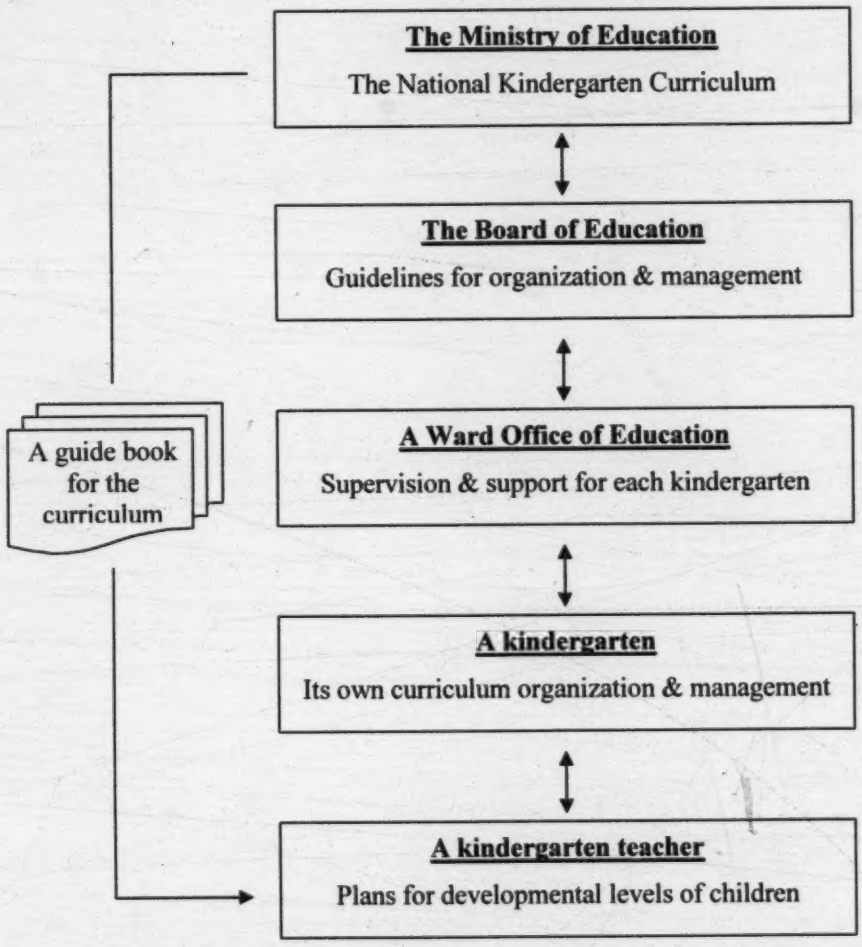
The Ministry of Education
The National Kindergarten Curriculum
The Board of Education
Guidelines for organization & management
A guide book for the curriculum
A Ward Office of Education
Supervision & support for each kindergarten
A kindergarten
Its own curriculum organization & management
A kindergarten teacher
Plans for developmental levels of children

Figure 1. Kindergarten Curriculum Organization and Management in the Republic of Korea.

The Academic Focus of Kindergartens in the Republic of Korea

An important mediating influence on Korean kindergartens is the overwhelming focus on academics in schools including preschools. In Korea, most students work to enter a university of high standards, believing that success in life requires them to graduate from a highly rated university (Kim et al., 2001). An academic background and

a network of personal and professional relationships are considered more valuable than their personal abilities when they search for employment after graduation. While this assumption may not be true, in order to enter the highest rated universities, students begin their preparation in elementary school and even in kindergarten (Kim, 2003). Such a practice is related to the Korean cultural understanding of the value of both education and social relationships.

One outcome of the emphasis on academic success is the syndrome commonly called the *'Grade Twelve sickness.'* Students in Grade Twelve are psychologically stressed due to the requirements of a national university entrance examination. Because they need an especially good grade to enter a highly rated university, they are very competitive. A frequently reported issue in Korean newspapers at examination time is the rate of suicide by students due to their despair about their school grades. In one instance, a Grade Twelve student jumped from the roof of an apartment complex because she expected a poor score on her university entrance examination (Sin, 2003).

The ultimate purpose of education in Korea, as related in official government documents, is to develop the ability to lead an independent life and to be able to participate in promoting the prosperity of all humankind (Ministry of Education and Human Resources Development, 1998). On the basis of these stated ideals, the image of the ideal citizen is a person who demonstrates creativity and autonomy, and contributes to the development of the community. However, most parents want their children to achieve a high grade in each school subject (Hyun, 2003). Consequently, teachers focus on academic skills, with the result that students are skilled in memorizing but lack a deep

understanding of their subjects. Students focus on test results rather than the learning process.

The situation is complex, however, as most Korean parents believe that appropriate character building is indeed more important than learning academic skills. These parents believe that the school curriculum should focus on basic habits of daily living and good manners and not only on academic learning. Hyun (2003) identified this situation as ironic, in that what parents believe regarding "ideal" students is in stark contrast to what they emphasize in practice: namely, that their children should achieve high grades across all school subjects, an emphasis that requires children to concentrate all of their time on academic learning (Hyun).

Academic pressure is exacerbated by the trend towards introducing English language education to young children. In the early 1980s, the Korean government introduced English education in the elementary schools as a special activity, and in 1997, English was established as one of the regular subjects in Grade Three (Park, An, & Ha, 1997). Since English has been a regular subject in elementary school, many parents are concerned about English education for younger children. The expectation for English competence even for young children means that English is taught in kindergartens, private institutions, and day-care centers. Most children can read and write Korean before entering a kindergarten, for example, having been taught at home, and then learn English in kindergarten. In most kindergartens with an English teacher, the children learn the alphabet first and then learn practical spoken English. The teaching materials and the methods of teaching English are influenced by those in North America, and many commercial English programs are available for young children in Korea.

Recently, institutions have begun teaching English in kindergartens without first undertaking sufficient research (Park et al., 1997). Anecdotal evidence indicates that the unchecked growth of English institutions and materials actually seems to worsen young children's language development as well as to increase their academic burden at an early age.

Rethinking Kindergarten Education in the Republic of Korea

While kindergarten has an important place in the educational system in Korea and is well attended, the seemingly poor fit between the curriculum and the child, and the child and the community's beliefs and values is a subject of debate. Some scholars and early childhood professionals are rethinking the curriculum, aiming to involve children as active participants in programs for development and learning. Furthermore, an integrated approach to early childhood education is being formed, combining 'education' and 'care.' During the past three decades, kindergarten generally offered educational programs for middle-class children, while a nursery or day-care facility cared for the children of low-income families. However, with the extension of early childhood education and care and increasing numbers of wage-earning mothers with young children, nursery facilities have been generalized across income levels. Current nursery facilities are pursuing education for the whole child, including the offering of social services, health services, and information about nutrition. Nursery facilities are now available for all wage-earning mothers and offer high-quality full-day programs as required. Consequently, both kindergartens and day-care centers offer full-day programs, and early childhood education stands at the forefront of efforts to introduce more child-centered methods into Korean schools.

Rethinking Assessment

Gullo (1994) observed, "From the moment of birth, assessment and evaluation play an important part in our lives" (p. 3). In Korean society, people are accustomed to being assessed and evaluated in many different ways. From elementary school to high school, students take a variety of tests such as academic readiness tests, achievement tests, tests for grading, and university entrance exams (Wortham, 2005). Testing, however, is only one method of collecting data to assess and evaluate students' academic learning. According to Goodwin and Goodwin (1982), assessment is "the process of determining, through observation or testing, an individual's traits or behaviors … and then assigning a number, rating, or score to that determination" (p. 523). The purposes of assessment in early childhood education are (a) to gain an understanding of a child's development, (b) to enable teachers to better understand how the child is progressing within the program to meet its goals, and (c) to identify students who are at risk for academic failure or are potentially in need of special education services or intervention (Gullo).

Assessment is "an essential component of the teacher's role" (the National Association for the Education of Young Children (NAEYC) & the National Association of Early Childhood Specialists in State Departments of Education (NAECS/SDE), 1991, p. 33). Through the process of assessment, teachers believe that they can determine what the students know, what the students can or cannot do, and what knowledge or information the students have acquired as a result of their activities and experiences. For early childhood teachers, several guidelines for appropriate assessment are provided by NAEYC and NAECS/SDE (1991):

1. Curriculum and assessment are integrated throughout the programs to meet the

goals and content of the program.

2. Teachers understand students' physical, social, emotional, and cognitive development and learning through the process of assessment. This process includes observations of and interactions with the students.
3. Assessment provides teachers with useful information to support students' learning and development, to plan for students, and to communicate with parents.
4. Assessment relies on demonstrated performance in such activities as reading and writing.
5. Assessment recognizes the "individual diversity of learners and allows for differences in styles and rates of learning" (p. 32).
6. Assessment demonstrates students' strengths and progress and what students know and can do or what they do not know and cannot do.
7. Assessment is a collaborative process involving students, teachers, and parents. Information from parents about their children's experiences at home is useful to support the students' learning and development at schools.

Recently, dissatisfaction with standardized assessment has resulted in a change in assessment practices in early childhood education in North America. The debate on this issue has focused on what types of assessment are appropriate for young children and "what uses and misuses can result from the outcomes of these evaluations" (Gullo, 1994, p. 4). For example, the misuse of standardized tests may not only cause students to be placed in inappropriate ability groups but also have undesirable effects on the curriculum (Meisels, 1989).

A number of social and educational factors are involved in attempts to reform assessment. The first involves the concept of its primary purpose (McAfee & Leong, 2002). Assessment is not meant to decide whether students are ready or eligible for a given program, for the "primary purpose is to guide and support children's learning" (McAfee & Leong, p. 3). The second involves changing ideas concerning how students develop and learn (McAfee & Leong). Students do not learn only what is taught and reinforced. In the process of teaching and learning, before acquiring knowledge and skills, students "develop their own cognitive maps of the interconnections among facts and concepts" (Shepard, 1989, p. 5). The third is that as the number of students with diverse cultural and language backgrounds increases, traditional assessment approaches may no longer be suitable for all students (McAfee & Leong). With information about those students' backgrounds, teachers need to assess what theses students know and can do (Wortham, 2005). Finally, the use of assessment for students with special needs is important (Wortham). Teachers need flexible assessment practices to determine those students' strengths and needs in terms of their developmental abilities and potential achievements (McAfee & Leong).

In Korea, performance assessment dominates assessment in kindergartens. According to Bae (1999), performance assessment was introduced into Korea in the mid-1990s as an alternative to "strict adherence to the standard tests and measurement paradigm" (Gullo, 1994, pp. 12-13). In particular, portfolio assessment was introduced in Korea as a form of performance assessment to determine students' status and progress (Lee & Kim, 1999). Portfolios are a systematic collection of students' work and a record of their learning process assembled to provide a representation of their achievement

(Grace, 1992; Gullo). Portfolios consist of writing samples, drawings, running records of students' behaviors and attitudes, and records of students' problem-solving skills (Gullo). Teachers use these collections of students' work as evidence to assess the students' overall development including that of their knowledge, skills, and attitudes.

Portfolios are also used for self-assessment and reflection (Wortham, 2005). Portfolios provide students with an opportunity to observe their growth and progress in learning by comparing their work such as drawings and to improve critical thinking skills (Wortham). In other words, the portfolio collections help the students to learn to recognize and reflect on their own improvement and achievement.

Like North American teachers, Korean teachers are dissatisfied with traditional strategies of assessment such as standardized tests. According to Kim (2000), standardized tests in Korean kindergartens have several undesirable effects: (a) students' learning abilities are not reflected in the tests; (b) the content of the tests' criteria is not related to students' lives and experiences; (c) the criteria do not represent the standards in all subject areas; and (d) the tests may have undesirable effects on teachers as well as students. Therefore, traditional measurements are not adequate to assess students' progress toward achieving many educational outcomes and are not compatible with learning processes and new instructional strategies (McAfee & Leong, 2002). With the demand for a new understanding of assessment, educators contend that the focus of assessment should be moved from teachers to students (Bae, 1999). Meisels, Harrington, McMahon, Dichtelmiller, and Jablon (2002) state that performance assessment was "developed in order to change the focus of instruction and to improve teaching and outcomes for students" (p. 3).

According to Gullo (1994), the purpose of performance assessment as an alternative form of assessment is to "incorporate actual classroom work into individual assessment" and to "enhance both children's and teachers' participation in the assessment process" (p. 13). In Korea, early childhood teachers are trained to understand that performance assessment is an essential complement of teaching-learning activities in the classroom. Teachers also expect that performance assessment leads to a variety of learning activities through "work samples, observation results, and teaching report forms" (Wortham, 2005, p. 13) because students' learning activities are targets in performance assessment (Bae, 1999). In other words, performance assessment provides students with an opportunity to demonstrate their level of understanding through their performance of their activities (Wortham).

In order to make the education process more effective, the content of the kindergarten curriculum including learning processes, instructional strategies, and assessment is being developed (McAfee & Leong, 2002). Standards have been established as educational outcomes in each subject area in the kindergarten curriculum. For example, the standards identify what students should know, what they should be able to do, how they learn, how teachers should teach, and how they should determine what the students have learned (McAfee & Leong). To satisfy these standards, teachers thus need to assess based on their instructional strategies and the students' learning processes.

In Korean kindergartens, teachers assess students' learning activities by using performance-assessment approaches such as checklists, field notes, anecdotal records, and portfolios over a long period of time (Kim, 2000). For example, the teachers organize and provide students with thematic units, projects, or investigations involving subjects

such as families, weather, insects, pets, or local communities to make the students' learning meaningful (McAfee & Leong, 2002). During classroom activities, the teachers observe all of the individuals' activities and record the students' behaviors in order to determine what the students have learned and what they should know to meet the standards in each subject area. Meisels et al. (2002) state that such strategies provide students with opportunities to improve their understanding, knowledge, and skills.

In Korean kindergartens, portfolios dominate assessment and evaluation in the project approach. Collections of students' work such as writing samples and drawings, and records of students' behaviours and problem-solving skills throughout the project help teachers to determine what the students have acquired in each session. The collections also give students an opportunity for self-evaluation at the end of a project. For their portfolios, the students get involved with the process of selecting their own work (Meisels, 1995). For example, in a project on the topic of an *ambulance* in a Korean kindergarten, students had an opportunity to collect their work on the project and make their own portfolio folder at the end of the project. With their portfolios, the students discussed what they had done throughout the project and on a subsequent extended project. In addition, the portfolios gave the teacher an opportunity to discuss the students' development with their parents. This kind of self-evaluation helps students realize what they have accomplished throughout a project (Katz & Chard, 2000). Students' portfolios serve as powerful instructional tools that offer students, teachers, parents, and administrators an opportunity to view students' growth and development (Meisels, 1995).

Alternative assessment such as performance assessment provides teachers with a great deal of information about students' activities and development (Meisels, 1995).

This kind of information is useful in enhancing instructional strategies and collaboration with the students' parents (Meisels; Wortham, 2005).

Documentation

Documentation is an essential part of the assessment of children's work and ideas: "Documenting children's learning may be one of the most valuable skills a teacher can develop today" (Helm, Beneke, & Steinheimer, 1998, p. 13). In the form of child observation and recordkeeping, documentation has been encouraged and practiced in early childhood education (Katz & Chard, 1996). In the Reggio Emilia school, documentation focuses on children's experiences and ideas in the course of their work (Harvard Graduate School of Education & Reggio Children, 2001; Katz & Chard). In addition, pedagogical documentation is used "as a tool for reflecting on pedagogical practices, and as a means for the construction of an ethical relationship to ourselves, to the Other and the world" (Dahlberg, Moss, & Pence, 1999, p. 145).

According to Dahlberg et al. (1999), "pedagogical documentation" is not simply child observation, but is carried out "to see and understand what is going on in the pedagogical work and what the child is capable of without any predetermined framework of expectations and norms" (Dahlberg et al., p. 146). "Pedagogical documentation" involves two related subjects: a *process* and the *content* of that process (Dahlberg et al.). The content of the documentation includes what children are saying and doing, the children's work, how a teacher interacts with children, and his or her work as an educator (Dahlberg et al.). A teacher has many ways to record the content such as using running notes, anecdotal notes, audio and video recordings, and photographs. The use of such material makes the pedagogical work concrete and visible and is important for the

process of pedagogical documentation (Dahlberg et al.). Teachers can thus reflect on their own pedagogical work and children's learning process and development.

According to Katz and Chard (1996), the Reggio Emilia school provides the field of early childhood education with a unique way to use the documentation of children's learning experience as a standard part of classroom practice. Documentation, as a way of gathering children's work and analyzing the children's learning process, includes transcriptions of children's comments about and explanations of a particular activity; photographs and videotapes showing children's work in progress; notes written by a teacher about children's conversations, discussions, and accomplishments; and comments made by children's parents (Abramson, Robinson, & Ankenman, 1995; Dahlberg et al., 1999; Katz & Chard; Staley, 1998; Vecchi, 1998). Documenting children's work does not involve just recording their learning experience, but provides a teacher with an opportunity to not only to review children's learning experience but also to understand the depth of children's learning, because documenting makes information about children's learning visible so that a teacher can understand their progress of development (Katz & Chard). Through the process of documentation, a teacher can gather evidence of children's learning and then can try to develop hypotheses about children's thinking and their learning. With materials obtained through documentation, a teacher is able to make decisions about developmentally appropriate methods to support children's learning and development (Katz & Chard). In addition, documentation in the Reggio Emilia school provides a detailed and visual display of children's learning (Abramson et al.). Through a display of children's work in schools, parents, other teachers, administrators, and visitors can understand both its content and aesthetics (Katz & Chard; Staley).

In the project approach, documentation enables a teacher to *see* the learning that takes place when developmentally appropriate teaching methods occur (Helm et al., 1998). Documentation also provides "the evidence needed for reliably assessing children's progress, for meeting accountability requirements, for monitoring individual students' growth and development, and for program evaluation" (Helm et al., p. 15). In the course of project work, according to Helm et al., the high-quality documentation of children's work and ideas can do the following:

1. Provide evidence of children's learning in all areas of children's development such as physical, emotional, social, and cognitive development
2. Offer insight into the learning experiences provided to children when a teacher uses an integrated teaching-learning method
3. Provide a framework for organizing a teacher's observations and recording individual children's special interests and developmental progress
4. Emphasize learning as "an interactive process by documenting what children learn when they are engaged in active exploration and interaction" (p. 24) with teachers, peers, and materials
5. Provide the advantages of using learning activities and materials that are concrete and relevant to the children's real lives
6. Enable a teacher to assess "what children know or can and cannot do so the teacher can modify the difficulty, complexity, and challenge of an activity as children are involved with it and as they develop understanding and skills" (p. 24).

Moreover, according to Helm et al. (1998), three theoretical frameworks are available for presenting and developing documentation: children's development, learning

experience, and teacher self-reflection. First, by providing documentation for individual children, a teacher can share information regarding children's growth and development with the children's parents, and children can also have an opportunity for self-reflection (Helm et al.). According to the 'guidelines for appropriate assessment' development by NAEYC (1991), assessment encourages children to share documentation to learn self-evaluation, and the information in children's documentation is used for planning instruction and communicating with their parents. Documentation may help children to remember both individual and group activities in order to reflect "on learning that leads to new experiences" (Abramson et al., 1995, p. 198). According to Staley (1998), documentation as "historical record" (p. 21) is a tool for assessing children's work and understanding in order to develop an effective curriculum. Furthermore, documentation is not only a tool for providing children's families with information about what happens in schools but also a way of sharing children's learning experience with their families, other teachers, administrators, and the community (Abramson et al.; Dahlberg et al., 1999; Rankin, 2004).

In the course of a project, documentation includes children's personal products such as the drawings, writing, and constructions and products made during group activities (Helm et al., 1998). In addition, children have an opportunity to write, speak, or draw in order to present their reflections on what they did in project work. When a child presents a statement, the teacher listens to the child's ideas and focuses on his or her "strategies of learning and meaning making" (Dahlberg et al., 1999, p. 148). A teacher also records the child's statement as an anecdotal note (Helm et al.) and keeps the note as an evidence to assess the child's growth and development.

Second, the purpose of documentation it to organize, demonstrate, and display children's growth and development in knowledge, skills, dispositions, feelings (Chard, 1998a), and attitudes through the learning experience in the course of a project. Evidence of children's learning experience includes samples of children's writing, drawings, constructions, and group products. With these items for documentation, a teacher is able to share ideas related to children's learning with the children's parents and colleagues (Helm et al., 1998). As well, a teacher's anecdotal notes or journals and notes for discussions with other teachers or children's parents are useful types of documentation for children's learning experience (Helm et al.). Through the process of recording these types of documentation, a teacher is able to understand and assess children's learning experience.

Finally, teachers use documentation to evaluate their effectiveness in guiding children through project work (Helm et al., 1998). While documenting children's learning by using a variety of methods, teachers can be "more confident about the value of their teaching" than they could be otherwise (Helm et al., p. 24). For example, documentation such as anecdotal notes, records of observations, suggestions from colleagues, records of conversations with children, and feedback from children's parents helps teachers not only to reflect on their role in the learning experience of children (Helm et al.) but also to improve their effectiveness in guiding children's growth and development. In the project approach, reflecting on his or her teaching enables a teacher to make decisions, such as about "what materials to provide and what situations to set up to simultaneously engage all children in learning" (Helm et al., p. 31). For further professional development, self-

reflection on the documentation provides "the vehicle for the teacher to improve [its] accuracy and efficiency" (Helm et al., p. 32).

In the project approach, a display is an important component of the documentation. When a project is completed, a teacher can present documentation at meetings with families or other people to share children's learning as well as the teacher's learning experience. The displays provide materials for "reviewing the project and evaluating the work achieved" (Chard, 1998b, p. 63). For instance, examples of children's writing, drawings, and constructions; photographs of children at project work; and the children's problem-solving strategies can be displayed in the classroom or hallway (Katz & Chard, 1996). In addition, the display, as a useful tool for classroom organization and management, can not only help a teacher to use the walls of the classroom to display information children need, but also help children to develop their knowledge and skills. For example, a display can give children the "spelling and vocabulary references they need, representation techniques, facts about the topic, and the names of children who might be able to help them in addition to the teacher" (Chard, p. 63).

Rethinking the Curriculum Approach

In Korea today, many early childhood educators believe that the components of the kindergarten curriculum should no longer be separated, but integrated to reinforce each other. As a result, the project approach has become a very popular method for organizing the kindergarten curriculum in Korea. Korean early childhood educators perceive the project approach as adaptable to local needs, believing with Katz and Chard (2000) that it can be "incorporated into the early childhood curriculum in a variety of ways, depending upon the preferences, commitments, and constraints of teachers and

schools" (p. 3). The way that assessment is understood in the context of the project approach is a main focus of this present study. Given the academic character of schooling in Korea, what place is afforded more child-centered assessment practices? Is there a good match between what teachers' believe and what they actually do?

The project approach as a means to organize the school curriculum and learning has a long history. In the United States, educators have been working since at least the 1960s to make the education system more open. At the end of the 1980s, Katz and Chard developed the project approach as part of this general trend towards more 'openness' in education. The term "project" is not new in early childhood education. According to Stewart (1986), Dewey and Kilpatrick introduced the project method in the early twentieth century, and American educators began to emphasize learning through doing projects. In the United States, the Bank Street College of Education in New York City included projects in its curriculum model, and educators in Great Britain also advocated projects for use in 'informal education' and the "integrated curriculum" (Katz & Chard, 2000, p. 19).

In the 1970s, many educators in the United States were influenced by the project approach and developed this method within a reform movement known as "open education" (Katz & Chard, 2000, p. 19). During the 1960s, American educators visited British primary schools and observed educational practices that have been labeled in various ways: "free day," "child-centered classroom," "developmental classroom," "integrated day," and "integrated curriculum" (Barth, 1972, p. 9). After observing British primary education, American educators used the term "open education" to refer to the use in the United States of British early childhood methods of education.

What is the meaning of 'openness' in education? A teacher who practices open education is "less content-centered and more person-centered" (Rogers & Church, 1975, p. 3) than other teachers, so that such a teacher facilitates children's learning by giving children opportunities to explore in and out of classrooms and to participate in activities related to things of interest to children. In open education, a teacher needs an open-minded approach to children's activities and experiences. According to Dewey (1916), 'open-mindedness' means that teachers should retain a "childlike attitude" (p. 175). Dewey also states that 'open-minded' means "accessibility of mind to any and every consideration that will throw light upon the situation that needs to be cleared up, and that will help determine the consequences of acting this way or that" (p. 175).

To help educators understand the perception underlying the practice of open education in both learning and teaching, Barth (1972) suggests several assumptions about children's learning and knowledge. First, Barth states that children have curiosity and can explore their world without any intervention. In other words, children learn in the process of participating in the activities they engage in. This emphasis gave rise to the expression 'learning by doing.' Second, although many educators and parents distinguish children's play from their work involving learning (Rogers, 1979), Barth argues that when children play with someone or something, their activity is "not just play" (p. 24). Through play, children have opportunities to find out interesting things or become involved in interesting situations. Barth states, "Exploratory behavior is of little consequence unless there is something to explore" (p. 24). Moreover, such behavior provides an opportunity for teachers to grasp "children's knowledge and understanding by observing and listening to them at play" (Katz & Chard, 2000, p. 50). Third, children's play is a natural way to

learn, particularly in group activities. Barth argues that when children are involved in "exploring the same problem or the same materials" (p. 30), they inevitably learn by collaborating with each other. Dewey (1916) suggests that when children interact with each other in group activities, children are influenced by and learn social skills from the various social environments in which they are involved.

A diverse array of materials and facilities in a rich environment can stimulate children to engage in active exploration (Rogers, 1979). This kind of environment also enables teachers to develop the conditions of learning and teaching. Dewey (1928) argues that teachers should "find what conditions must be fulfilled in order that study and learning will naturally and necessarily take place, [and] what conditions must be present so that pupils will make the responses which cannot help having learning as their consequence" (p. 180). To create the conditions that will lead to "self-educative activity, or learning" (p. 180) and cooperative activities among pupils (Dewey), open educators give children many opportunities to have their curiosity provoked and to engage in activities that interest them.

Hopkins (1979) states that "students should be free to determine when and how they learn" (p. 58), but also that educators need to be concerned about "who decides what is to be learned" (p. 58). While open education allows children to be free to decide what to do, teachers have to retain "a significant control over what the student is to learn" (Hopkins, p. 58). In Dewey's (1916) view, 'freedom' means "intellectual initiative, independence in observation, judicious intervention, foresight of consequences, and ingenuity of adaptation to them" (p. 352). In addition, Dewey states that intellectual

freedom and social interaction in groups enable their members to solve social problems by practicing free communication.

The Structure of the Project Approach

A "project" is an in-depth investigation of a particular topic undertaken by an individual child, a group of children or, occasionally, a whole class (Katz & Chard, 2000). Topics should be related to children's interests and experiences. In other words, children should be given an opportunity to become familiar with a topic such as a car, a school or their neighborhood so that they can increase their interest in and curiosity about it (Katz & Chard). Thus, teachers should discuss the topic they have chosen with the children and use the children's interests as a starting point. The duration of a project depends on the children's ages, their interests, and the features of the topic.

Teachers do not impose projects on students, for topics must be negotiated with students in order for them to engage in activities that interest them. According to Dewey (1916), an interested child identifies "with the objects which define the activity and which furnish the means and obstacles to its realization" (p. 137). Children's interests and purposes while participating in activities can change, so teachers have to be flexible when establishing the goals of projects. Moreover, teachers have to provide activities that interest children enough to encourage them to develop their own ideas. Teachers thus have to organize educational activities for children to develop project work that requires "observation, the acquisition of information, and the use of a constructive imagination" (Dewey, p. 137).

A purpose of the project approach is to cultivate young children's minds. Doing so involves cultivating "not only knowledge and skills, but also social, emotional, moral,

aesthetic and spiritual sensibilities" (Katz & Chard, 2000, p. 6). Therefore, a teacher developing a project must acknowledge and respect children's cultural and family backgrounds. The project approach is an integrated education program suggesting a way of teaching and learning and includes development in language arts, mathematical-scientific skills, and social behavior. In the process of project work, children can make decisions as well as express their own thoughts in writing or drawings, and teachers who give the children guidance and feedback increase a project's effectiveness. Katz and Chard state that a project's framework includes five features: "discussion, fieldwork, investigation, representation, and display" (p. 69) and helps teachers "focus children's attention and effort on a topic of study over an extended period of time" (p. 70).

Project work consists of three phases. In the first phase, because the project approach is child-centered, teachers and children collaboratively decide on the topic of a project and plan what they will do (Trepanier-Street, 1993). In this first phase, the children have an opportunity to realize that their own past experiences are related to the topic (Katz, 1994) and to anticipate having new experiences. The teachers should first stimulate the children's curiosity about the topic and then help the children to develop questions about it.

In the second phase, teachers give the children opportunities to do fieldwork such as observing places, objects or people and interviewing experts on the topic. The children then investigate, draw, and make notes from their observations; construct models; and discuss their new understanding as a result of the fieldwork (Chard, 1992). Through the process of the fieldwork, the children also learn new vocabulary related to the topic.

In the third phase, teachers arrange "culminating and debriefing events" (Katz, 1994) so that the children can share what they have learned. The children then have time to apply their new understanding and knowledge and to express them through dramatic play, displays, and portfolios of individual work (Katz & Chard, 2000). The teachers help the children to review and evaluate the whole project. The teachers can also link the project being concluded to the topic of the next project in order to further develop the ideas and maintain the interest of the children. At the end of a project, they should have time to evaluate together what they have learned and what they will do for the next project.

According to Katz and Chard (2000), the project approach is a broad approach in early childhood education that provides children with various active and concrete experiences that engage them in learning. Katz and Chard suggest that children also improve their cognitive development while they acquire new understanding, concepts and vocabulary relating to their in-depth knowledge of familiar objects through project work. Especially within group projects, children learn to respect other opinions, experience different points of view, and evaluate their own personal strengths and weaknesses (Trepanier-Street, 1993). Children also obtain social skills as they work collaboratively with each other. The project approach therefore promotes social as well as cognitive development and helps children to have positive attitudes toward learning.

In Korea, this approach has been promoted by experts as having the potential to meet the requirements of the five components in the Korean kindergarten curriculum (Ministry of Education and Human Resources Development, 1998): *Health, Society, Expression, Inquiry,* and *Language.* An integrated approach to the curriculum is also used

in the elementary grades. The *Health* component uses various physical activities to help children develop the physical strength needed in ordinary life. This component also helps children develop balanced mental and physical health by enabling them to acquire healthy and safe living habits (Ministry of Education and Human Resources Development). Through project activities such as exploring, questioning, observing, measuring, predicting, experimenting, and communicating, children can have many opportunities to develop healthy and safe living habits by acquiring the necessary knowledge and skills.

To satisfy the requirements of the *Society* component, children in groups can benefit from the project approach by participating in activities such as group discussions, field trips, and role-playing. These activities enhance children's social skills such as those involving how to behave in front of people, how to control personal feelings, how to share ideas with peers, and how to treat people with respect in group activities.

Project activities can also give children opportunities for *Expression*. For example, participating in drama helps children to express their own opinions and emotions as well as those of the characters the children represent. In kindergarten, children can be taught through an informal and integrated approach, which helps them to investigate and symbolize their own experiences. Through a particular project, children can use analytical thinking spontaneously to investigate the topic of study.

The activity of *Inquiry* helps children to use their curiosity to develop the abilities needed to solve problems by exploring a variety of materials and natural phenomena (Ministry of Education and Human Resources Development, 1998). In project activities, children can learn to develop skills and attitudes for scientific investigation through

active exploration by observing their environment and natural phenomena, having questions about them, and exploring transformation processes. Children can also develop basic mathematical abilities and attitudes by classifying, comparing, and looking for relationships among objects or events in daily life.

The *Language* component helps children not only to improve their ability to use language, but also to enjoy language activities (Ministry of Education and Human Resources Development, 1998). In project activities, children have many experiences of listening, speaking, reading, and writing. In other words, project activities enable children to develop appropriate basic listening and speaking skills. For example, through the project approach, children can improve in listening attentively to and understanding oral language, stories, poems, or children's songs. Particularly when presenting project work, children can express their own thoughts and experiences by speaking, writing, drawing, or dramatic role-playing, and can develop good listening and speaking skills.

Along with incorporating the five components discussed above, the project approach also helps children to acquire basic life skills and to cooperate with other people (Katz & Chard, 2000). This aim fits in well with the purposes of the Korean kindergarten curriculum, with the result that many educators are trying to implement the approach. Currently, a university-level training program for early childhood educators in Korea is working to improve the understanding of the project approach and its potential for enhancing children's development. Teachers are also seeking to learn how to use the project approach within the existing curriculum. This present dissertation's research with its focus on assessment in the project approach is therefore set within this context of experimentation with a new approach.

The Transfer of Educational Ideas

While the project approach appears to hold considerable promise for kindergarten reform in Korea, the process involved in the transfer of educational ideas from one context to another must be considered. In Korea, when educational administrators have imported educational ideas, policies, or curricula from other countries to apply in the Korean educational system, they have first investigated the ideas, made decisions, and reformed the ideas to fit into Korean educational systems and culture. Phillips and Ochs (2003) divide this process of 'borrowing' educational ideas from other nations into four stages: *Cross-national attraction*, *Decision*, *Implementation*, and *Internalization/Indigenization.*

Cross-National Attraction

First, because of factors such as political and economic changes, internal dissatisfaction in the education system, and "innovation in knowledge and skills," (Phillips & Ochs, 2003, p. 452), educators look to borrow educational ideas from foreign countries. In other words, these factors cause educational administrators to search for "foreign models which might solve existing or emerging or potential problems" (p. 453) relating to educational issues including philosophy, goals, strategies, and structures.

Decision

After investigating the existing problems and foreign models, educational administrators begin the process of change. Phillips and Ochs (2003) emphasize that, at this point, educators are taking an essentially theoretical approach to the issues. Even though the administrators are using foreign models to reform educational policies and

practices, these administrators need to consider their own theoretical and cultural backgrounds.

Implementation

During this stage, educational administrators need to determine if the foreign models can be adapted to the local educational context (Phillips & Ochs, 2003). The period of change might depend on the adaptability of particular policies and the established procedures including assessment, investigation, certification, and training arrangements (Phillips & Ochs).

Internalization/Indigenization

Finally, through the process of change, the adapted foreign models are internalized in educational systems. During this stage, educational administrators need to observe and evaluate how the adapted policies are working in the system, and "the results of such evaluation might then start the whole process again, with further investigation of foreign models to put right perceived deficiencies" (Phillips & Ochs, 2003, p. 457).

The project approach can therefore be seen to be in the implementation stage, with the approach being introduced into teacher education programs and kindergartens, and policies regarding features such as assessment being put into place. Therefore, the development of the project approach during this phase must be studied in order to make good decisions regarding the internalization and indigenization of this approach in Korean kindergartens. The ways in which teachers adapt Western ideas to fit Korean kindergarten and culture is a question of immediate concern (Hyun, 2003). Thus, my research question is the following: How do teachers undertaking the project approach in the Republic of Korea perceive and use assessment?

CHAPTER 3

The Method of the Study

Design

In pursing answers to a research question, a researcher should use the most appropriate method. In my research, I applied the case-study approach to obtain and understand answers to my research question. Gall, Gall, and Borg (1999) suggest that case studies are an effective means to describe, explain, or evaluate particular social phenomena. An in-depth understanding of a situation requires human interaction and inquiry such as interviews and observations in addition to document and media analyses (Merriam, 1998). Berg (2001) states that "case study methods involve systematically gathering enough information about a particular person, social setting, event, or group to permit the researcher to effectively understand how it operates or functions" (p. 225).

The four key characteristics of case-study research are the study of particular instances, an in-depth study of the case, the study of a phenomenon in its natural context, and the representation of both the researchers' perspective and the participants' perspectives (Gall et al., 1999). First, a case study is conducted to focus on a particular phenomenon including the processes, events, or individuals of interest to the researcher. Because a particular phenomenon includes many aspects, the researcher selects a focus for research: "the aspect, or aspects, of the phenomenon on which data collection and analysis will concentrate" (Gall et al., p. 292). Second, a case study involves the collection of data about a particular case selected to represent the phenomenon. Third, a case study involves "fieldwork in which the researchers interact with participants in their natural settings" (Gall et al., p. 293). When I conducted interviews with kindergarten

teachers, I wanted to learn about their experiences in the context of their past and current lives as teachers. Finally, a case study seeks to "develop an understanding of a complex phenomenon as experienced by its participants" (Gall et al., p. 293). Through informal conversations with research participants, the researcher gains insight into the participants' perspectives on a particular phenomenon. Moreover, while researchers maintain their own perspectives as investigators of the phenomenon, they need to learn to view it as the participants do. The combination of these two points of view helps the researchers "make conceptual and theoretical sense of the case, and to report the findings so that their contribution to the research literature is clear" (Gall et al., p. 293).

In my research, two individual teachers implementing the project approach were studied. Such research is referred to as "collective case studies, cross-case, multicase or multisite studies, or comparative case studies" (Merriam, 1998, p. 40). Comparative case studies involve "collecting and analyzing data from several cases and can be distinguished from the single case study" (Merriam, p. 40). Bogdan and Biklen (2003) state that if a researcher is doing a second case study for comparison purposes, the researcher should choose "a second site on the basis of the extent and presence or absence of some particular characteristic of the original study" (p. 63). For this reason, the first case is studied in order to identify critical issues and themes prior to beginning fieldwork in the second case. However, occasionally the researcher may go back to the earlier case to collect additional data (Bogdan & Biklen). According to Bogdan and Biklen, a researcher can improve his or her technique in a subsequent case study, and the first case study will also "have provided a focus to define the parameters of the others" (p. 63).

I focused my research on the process of teachers' understanding and use of assessment in the project approach. Merriam (1998) suggests that a "case study is a particularly suitable design if you are interested in process" (p. 33) and introduces two meanings of "process" in the case-study research. The first meaning of "process" is *monitoring*: describing the context of the research, discovering the extent of the programs that have been implemented, and providing immediate feedback (Merriam). The second is *casual explanation*: "confirming the process by which the treatment had the effect that it did" (Merriam, p. 33). In this research, I considered the social and cultural context of early education in Korea, the particular kindergarten setting, and the extent to which assessment in the project approach was being provided and how it was being used. I also researched how the teachers' understanding of the project approach was impacting on their students' achievement in the process of assessment.

Research Setting

The research was undertaken in Dream-Hill Kindergarten in the largest industrial city in Korea. This kindergarten met the criteria for the study by having several kindergarten classes that would permit comparison. Furthermore, a local expert recommended this kindergarten as one using the project approach. Dream-Hill Kindergarten was established with four classes in 1999. According to the principal of this private kindergarten, it was founded to provide young children with space to play as well as learn. The principal loves young children and aims to offer children rich learning experiences. She is also enrolled in a college program to learn more about the field of early childhood education. She strongly believes that the project approach is an appropriate teaching-learning method that satisfies the goals of integrated education.

The kindergarten has eight classes with about two hundred students in total: one class for four-year-olds, three for five-year-olds, and four for six-year-olds. Most students remain for two years in the kindergarten and start at age five. In each class, the average number of students is 28, meaning that the teacher-student ratio is 1:28. In general, the class size is larger in urban than in rural areas in Korea.

In general, kindergarten facilities include a classroom, a teacher's room, a washroom, a computer room, and a playground. Dream-Hill Kindergarten includes typical facilities such as a computer room, a playground, an assembly hall, a ball-pool room,[3] a garden, and a farm. The kindergarten students have regular access to the computers in the computer room. The kindergarten teachers help the students become familiar with computers and develop skills using them. In the farm, students have an opportunity to feed and observe animals such as rabbits, pigeons, chickens, and wild geese. In the garden, while raising vegetables such as lettuce, cucumbers, and hot peppers, the students learn the process of growing vegetables.

Participants

Since my research was focused on assessment in the project approach, I considered participants who were using a variety of forms of assessment for students' activities and work in the project approach. I believe that assessment in the project approach differs from that in teacher-directed methods for children's activities and work. I also believe that the assessment forms and techniques in the project approach depend on

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[3] A large room with number of soft balls. The depth of the pool is approximately 30 inches.

a teacher's understanding of what is important based on the teacher's experiences concerning students' achievement in a class. In order to recruit participants, I presented the study to the staff of Dream-Hill Kindergarten at a special meeting and requested two volunteers, one having little experience with the project approach and one having a great deal of experience with the project approach. The two volunteers were the novice Amy and the more experienced Betty.

Amy and Betty were interested in assessment in the project approach as a means of enhancing their students' development. However, they were uncertain how to assess their students' project work and did not know what assessment methods to use in their responses to it.

Amy had been working in the kindergarten for two years after graduating from a university and had one-and-a-half-year's experience with the project approach. She was working with six-year-old students. When she was young, she liked and respected teachers because she felt that they could make a great difference in their students' lives, and she then had a vague desire to become a teacher. Even when she was in high school, she wanted to be a teacher, so she studied hard so she could go to university and get a degree in early childhood education. She was an average student at university. After she had graduated from university, a job interview resulted in her being hired by the Dream-Hill Kindergarten, her first workplace as well as the place where she was learning the true meaning of "education."

Amy believes that a kindergarten teacher should have a sense of duty as an educator. She also thinks that children must not only obtain knowledge and learning skills but also cultivate moral character. Thus, she emphasizes basic life skills and morals, and

the importance of being a member of a community. During her first year as a kindergarten teacher, she did not have time to have a social life, but after the beginning of her second year, she was able to have some spare time. After school, she does yoga to relax her body. During the weekend, she loves to travel throughout Korea.

Betty had worked as a kindergarten teacher for six years after graduating from university. Before working in Dream-Hill Kindergarten, she had worked in another kindergarten for one year. She did not do project work in the previous kindergarten, so she had five years' experiences of project work. She also worked with six-year-old students. When she was young, she did not dream of becoming a kindergarten teacher, but her mother persuaded her to study early childhood education at university. At university, as a representative of the Early Childhood Education Students' Association, she had many opportunities to network with a range of educators. Through these experiences, she became open-minded concerning education. As a kindergarten teacher, she believes that theory is useless without practice.

Betty believes that a kindergarten teacher should have sense of duty, which is developed by learning from other kindergarten teachers and understanding that the teacher's role is to enhance children's development. Betty believes that in the future, she will leave Dream-Hill Kindergarten and teach in her own kindergarten or day-care center. During her spare time, she enjoys web-surfing and meeting with her friends. On Sundays, she works with children in a church and watches a movie with her family.

Both teachers learned about the project approach when they were in university. They also attended in-service teacher-training sessions on the project approach. In Korea, kindergarten teachers usually attend these sessions during summer or winter vacations.

Through the training sessions provided by professors and researchers in the field of early childhood education, the teachers can learn about new programs for young children or learn more about the programs they are already using in their classrooms.

In addition, at Dream-Hill Kindergarten, both teachers share their ideas about project work with other teachers and get information about the project approach at teachers' meetings. Before the beginning of a new school year, the kindergarten teachers discuss plans for their own curriculum, which is based on the National Kindergarten Curriculum, and create one-year schedules for kindergarten activities including project work. For the project work, the teachers usually choose two topics for each year at the teachers' meetings. When they select topics, they refer to resource books including case studies of the project approach, a collection of project samples, and books about the actual project work. From the resource books, the teachers learn what activities are related to a specific topic, and, accordingly, they select their students' activities. As well, they might choose a topic from the resource books and then add ideas or activities of their own. The topics might be changed according to the students' interests, but the teachers' selection of possible topics is based on the contents of each subject area in the National Curriculum, the students' interests, and the teachers' own plans for the students' development. For example, at teachers' meetings, the teachers might suggest two topics based on their own opinions and then after discussions, choose common topics for the project work.

Although all kindergartens in Korea follow the National Curriculum, the ethos, the approach used, and the teaching methods and materials can differ widely. Selecting participants from different kindergartens would have introduced a high number of

variables related into the different settings. For this reason, two participants from the same kindergarten were chosen for this study. Moreover, using two cases was important as a means to understand assessment in relation to different teachers' experiences of the project approach. As well, using more than one case strengthened "the external validity or generalizability" of the findings (Merriam, 1998, p. 40).

Data Collection

The data for this study were collected by using interviews, observations, field notes, and a review of the teachers' anecdotal records during the course of a single project in each of two classrooms. According to Katz and Chard (2000), projects generally last for a period of four to six weeks, with the actual length depending on the children's age, the kindergarten curriculum, and the topic. The project studied for this thesis lasted four weeks. Although the data gathered focused on the issue of assessment, which was the topic of the study (Merriam, 1998), other relevant information was also collected.

Interviews

Interviews play a significant role in case-study research. While observations are not controlled by researchers, interviews are influenced by them (Stake, 1995), so I had to keep key questions in mind during my interviews with the teachers (Gall et al., 1999; Stake). According to Goodwin and Goodwin (1996), "interviewing allows the researcher to gain insights into others' perspectives about the phenomena under study; it is particularly useful for ascertaining respondents' thoughts, perceptions, feelings, and retrospective accounts of events" (p. 134). In this study, the interviews were informal and occurred in the natural course of conversation (Gall et al.). Questions were open-ended

and focused on the teachers' perspectives of assessment in the project approach, their reflections on the students' performance and work during each lesson, and their preparations for the next project session. The interviews consisted of three phases. During the first phase, the questions involved the participants' knowledge and methods of assessment before starting a project. The questions during the second phase involved the process of assessment in project work. Finally, during the last phase, the questions focused on how the information gained from the assessment of the project work would help the participants plan for the future. I describe the contents of the interviews in the next chapter and provide a copy of the interview questions in Appendix A. Handwritten notes were taken during the interviews, when notes were determined to be preferable to audiotape in that they permitted reflections that could lead to more specific questions.

Observation

The researcher was a non-participant observer in the participants' classrooms. In other words, I was removed from class activities, and my observations occurred from outside the ongoing project work (Adler & Adler, 1994). My active involvement in the classroom activities might have influenced the teachers and, consequently, changed the results of my research. During my observations, I sat far back from and out of sight of the students in the classroom, and I never commented during project work.

As the two participants developed their own project work according to the same schedule, I alternated between the two classrooms. In other words, I attended each class on a different day, and I observed an entire project session for approximately two hours during each observation. In addition, I observed the students' activities such as field trips, discussions with other students, and drawing, and I took notes about the project work.

According to Merriam (1998), observations are conducted to provide emerging findings for interviews, and a review of documents such as journals, daily notes, and photographs can help substantiate the findings. In this study, my observations provided information for my conversations with the teachers. At the conclusion of each daily project work session, I engaged the teachers in an informal conversation about the project in relation to assessment. After the conversations, I recorded key ideas and episodes. My observations are included in the description of the project work in Chapter 5.

Field Notes

The data set consisted of field notes based on my observations, the teachers' written plans, their reflections on the project work, and their comments during interviews. According to Stake (1995), documents such as teachers' plans can "serve as substitutes for records of activity that the researcher could not observe directly" (p. 68), while field notes can be key repositories for case-study research. Field notes should be descriptive and analytic (Glesne, 1998). Researchers who use detailed field notes should focus on accuracy but "avoid being judgmental" (p. 50) and vague words such as *many, some, nice, good, or wonderful* (Glesne). In the process of taking field notes, researchers recognize what they need and do not need to record regarding their problem statement (Glesne). In this study, my field notes helped to remind me of the students' activities in a specific situation and also helped to describe the project work (see Chapter 5).

Anecdotal Records

In the project approach, the information collected and recorded during project work is important for assessing students' behaviour, activities, and progress. Recording information about what students have done and learned helps teachers to focus on each

student's development and to assess the students' performance and work (McAfee & Leong, 2002). Anecdotal records are focused, brief, narrative descriptions of a specific event (Gullo, 1994; McAfee & Leong). According to Gullo, anecdotal records are widely used for a child or a small group of children to document their "attitude towards learning, emotional development, [and] peer relationships, or [the] effects of health on children's adaptation to school settings" (p. 72). In addition, the anecdotal records can be used in communications with the students' parents (Helm et al., 1998). Notes about a child's unusual behaviour or a special activity at school can be used in telephone conversations with or letters to the child's parents to share information about the child. According to Wortham (2005), anecdotal records might be used by teachers, parents, or a physician to track children's development in order to study unusual behaviours.

Occasionally, teachers state that taking anecdotal notes while working with students is difficult. To help teachers, a number of guidelines for making anecdotal records are available. First, an anecdotal record should be the chronological record of what a teacher directly sees and hears while observing an event (Cartwright & Cartwright, 1984; Goodwin & Driscoll, 1980; McAfee & Leong, 2002). Teachers should describe the event as exactly as possible. For example, teachers should not summarize students' activities or conversations related to the event (McAfee & Leong). Second, teachers who do not have enough time to take detailed notes while observing students should still take brief notes for use later (McAfee & Leong). While working with students, teachers could note the students' names and write down key words relating to the event. Later, teachers can describe the event in more detail. Third, teachers should include "all the information necessary to understand the description" (McAfee & Leong, p. 75). This information

should include what happened before and after the event, who was involved, and what was provided. If teachers choose to include an interpretation of an event in their anecdotal records, the recording of the students' behaviours and the interpretation of the event should be separated (Cartwright & Cartwright; Goodwin & Driscoll). In this study, the teachers recorded their anecdotal notes during the project work, and these notes included some students' conversations and activities, and the teachers' own comments. These notes helped me to understand project sessions that I had not attended, and added to my understanding of those I had observed. The teachers' anecdotal records are discussed in Chapter 6.

Data Analysis

Data analysis is "the process of systematically searching [through] and arranging" (p. 147) data collected through observations, interviews, and documents (Bogdan & Biklen, 2003). In case-study research, the purpose of data analysis is to provide an understanding of the case in relation to the research question (Stake, 1995). In this study, data analysis occurred during data collection as well as after the projects had been concluded (Goodwin & Goodwin, 1996).

During the course of the case studies, I took notes not only to capture what I had seen, heard, and discussed with the participants, but also to reflect on the collected data. After most of data had been collected, I organized them to develop an analytic coding system. Bogdan and Biklen (2003) provide researchers with several steps to develop a coding system: a researcher examines his or her data for regularities, patterns, and topics and then writes memos to "represent these topics and patterns" (p. 161). These memos are coding categories used to sort the collected data. Occasionally, some coding

categories will be created by the researcher during data collection (Bogdan & Biklen). In this study, the coding of the data was ongoing and based on an analysis of the research literature on assessment and on the Korean teachers' perceptions about what they knew and needed to know about the project approach as a context for children's learning. Glesne (1998) states that coding is "a progressive process of sorting and defining" (p. 135) collected data that are applicable to a study's purpose. When a researcher studies data collected in a qualitative inquiry, "each major code should identify" (p. 136) a concept or a main idea (Glesne).

In this study, when I coded my data, I identified the main ideas regarding the research questions and also had an opportunity to discuss the data coding with the participants. To analyze the interview data, I coded the contents of interviews as soon as they had been completed. Because I interviewed the participants in Korean, I first translated what they had said into English, and then I coded their responses. In addition, after coding the data, I reviewed them with the participants as a mean of checking the translation and my interpretation for accuracy.

My analysis of the data relating to the students' performance and work in the project work began as soon as an entire project had been completed. I coded the data according to the chronology of the project work. In other words, I described the students' performances and collected the students' work in chronological order. When I analyzed the teachers' anecdotal records, I organized their records in a chronological sequence and translated them into English.

Ethical Considerations

I adhered to the *University of Alberta Standards for Protection of Human Research Participants*, which have been established for all individuals completing research at the University of Alberta. An ethics form and approval were obtained from the Ethics Review Committee of the Department of Elementary Education. Informed consent (see Appendix G) was obtained in writing from the participants before the study began, and I informed the participants of the purpose, nature, and extent of the research, both orally and in consent forms prior to the beginning of the research. The participants were informed that their involvement in the research was voluntary and that they were free to withdraw from it at any time without penalty. In order to protect the identity of the participants, anonymity and confidentiality were ensured. The participants were allowed to review the data included in the transcribed comments. As the researcher is primarily responsible for the collected data and the subsequent contents of his or her study, I treated all the participants in a manner that was respectful of their rights and identity, and appreciative of their participation in the research.

CHAPTER 4

Analysis of Data - Interviews

Introduction

Interviews were scheduled with two kindergarten teachers at the beginning of a project. Before interviewing the participants, Amy and Betty, I met with and talked to them in their classrooms. First, in an informal conversation, I asked them to talk about their educational background and professional experiences as kindergarten teachers, and then I talked with them about a specific issue, their assessment practices in the classroom. In addition, during my first meeting with them, I explained the purpose of my research, the questions I would ask in the interviews, and what I would be doing during the project.

The interviews with the teachers took place in their classrooms after school. First, I interviewed Betty. Before I asked her questions from a prepared questionnaire, we talked about a variety of general topics to create a relaxed atmosphere. When she began to talk about her assessment practices, I tried to use key words to make a record of her comments. After finishing the interview with Betty, I moved to another classroom where Amy was waiting for her interview. The process of this interview was similar to that of Betty's interview.

The Teachers' Understanding and Practices of Assessment

The interviews with the teachers were conducted in Korean, and each interview lasted for about one hour. At the beginning of the interviews, I explored the teachers' perceptions of and preparations for assessment and then I focused interview questions on assessment practices in the project approach. I concluded the interviews with questions related to the use of assessment information from project work. The review of teachers'

responses to the interview questions is divided into three phases focused on assessment practices related to project work: assessment practices prior to starting a project, assessment practices during a project, and assessment practices after completing a project.

First, the teachers were asked about their perceptions of the students' existing knowledge, the process of gathering information about or using guidelines for assessment, and their assessment practices for the students' learning. They then described their forms of assessment used in the project approach, the factors they considered when assessing students' performance and work during a project, gathering information on the students' performance and work, the curriculum objectives and the students' performance in project work, their concerns related to the students' achievement on projects, and their preparations for the next project session. Finally, they explained their evaluation of learning in relation to the standards for each subject area in the National Kindergarten Curriculum, sharing information about the students' activities with their parents, and the use of assessment information for the next project or class activities.

Assessment Practices before Getting a Project Started

The teachers' perceptions of their students' existing knowledge.

At the beginning of a school year, the kindergarten teachers assess their students' existing knowledge in every field such as creativity, literacy, sensory skills, science, and expression. Because all students have different abilities in any field, the teachers determine what the students are and are not able to do and what they know or do not know. Through the process of assessment, the teachers are better able to meet the learning needs of each student in their class. The two participants stated that they

typically use two ways to identify their students' existing knowledge: the G & T program and the use of circle time or shared story time.

As described in Chapter 2, the G & T program allows teachers to determine their students' existing knowledge and to support the development of each component with the work of the program. During the 'Circle Time or Shared Story Time' session, students have opportunities to share their ideas about a specific topic with other students. At the same time, teachers can assess each student's abilities in each subject area. During the interviews, the two teachers stated that they assess the students' abilities to express themselves, to ask questions and provide answers, and to understand basic concepts. In addition, the teachers stated that they observe the students' daily behaviours in order to understand each student's character.

Betty said, "I obtain information about the children's personality from their parents." Through telephone conversations with the parents, Betty gathers information about each student, and she notes his or her main personality traits. She stated that doing so helps her when she is observing and assessing the students' activities in the kindergarten. In addition, when the parents visit the kindergarten, Betty occasionally meets with them and talks to them about their children's abilities and activities.

Gathering information about or using guidelines for assessment in the kindergarten.

During the interviews, I asked the teachers how they obtain information about or guidelines for assessing students' learning activities. Amy said, "I don't have specific materials except the guideline of the G & T program for teachers." She also reported that she uses the information that she learned at a university lecture. The guidelines for the G

& T program provide directions for how to use worksheets to assess students' outcomes and how to use one of the five levels of assessment for each component. As well, the guidelines also provide sample assessments. Amy obtains additional information about assessment by attending teachers' meetings at the kindergarten.

Betty stated, "I try to find information about or guidelines for assessment from the Internet, books, journals, magazines, and so on, related to early childhood education." She also shares information about assessment at teachers' meetings at the kindergarten. Moreover, she obtains information from the National Kindergarten Curriculum. Each component includes a detailed description of its sub-areas and the contents of its activities. Betty uses the descriptions of each component to devise her own criteria to evaluate her students' learning activities and also tracks student progress in relation to the National Curriculum's guidelines in her teacher's diary (see Appendix B).

The teachers' assessment practices for the students' learning.

In order to understand the students' learning activities, the teachers use different kinds of assessment forms in the classroom. Amy mentioned, "I usually assess the children's activities after their oral questions and answers." She pays attention to the students' answers and then assesses how the students understand and respond to questions. She also assesses the students' learning activities by using worksheets. For instance, the students complete a worksheet related to the understanding of numbers. After school, Amy assesses the students' mathematical learning by reading the worksheets. She then decides who still needs to learn basic concepts.

Betty also uses worksheets as one way of assessing students' learning. She reported that she examines the students' worksheets and asks the students about anything

she cannot understand. For each student, she writes comments in her own teacher's diary. In addition, she records each student's daily activities focused on a specific activity. She has about thirty students, so recording all her students' daily activities is difficult. Thus, she explained, "I try to write down two of the children's learning activities every day and divide the children's activities into each component listed in the National Kindergarten Curriculum." She said further, "I focus on the children's progress by comparing their present and past performance of the same activities."

Betty mentioned, "Communication with the children's parents is helpful for understanding the children's activities in the kindergarten and for assessing the learning activities." She stated that if she has information about the backgrounds of her students, she can more easily understand their behaviours and interact with her students than she can when she has no information about them. When the students' parents visit the kindergarten, Betty can meet them and talk about their children. However, she usually communicates with the parents by phone. Through conversations with the parents, she obtains information that she records in her diary.

Assessment Practices during a Project

Forms of assessment used in the project approach.

Teachers using the project approach use different forms of assessment than are used with other teaching-learning methods. However, Amy stated, "The forms of assessment in the project approach are not very different from those used with other teaching-learning methods in the classroom." During project work, she records the students' behaviors in her teacher's diary in order to determine what the students have

learned and what they still need to learn to meet the standards in each subject area, and then she keeps her diary for future reference.

Amy assesses the students' learning by using their project work such as worksheets, and she focuses her assessment method on the end of a project. The students' project work includes their story about a topic, drawings representing their experiences, questionnaires, and drawings of what they looked at. On the final day of a project, Amy gives the students an opportunity to evaluate their own project work, and they then express their feelings about it, either orally or in writing. Amy said, "I assess the children's learning activities based on their own evaluation of their project work." Amy stated that through her evaluation, she can assess the students' literacy, speaking and drawing abilities, and basic attitudes.

Betty mentioned, "I try to make the best use of my notes." Like Amy during project work, Betty tries to observe students doing every activity related to their development. She also assesses the students' learning activities by using their project work. Betty said, "Most products of a project are writings and drawings, so I write down notes related to my assessment of these products." She adds her opinions about the children's development. At the end of a project's activities, she looks at her notes and decides how much her students have learned in areas such as language development.

Using a different way of assessment from that of other teaching-learning methods, Betty stated, "I make a checklist for each project to assess the children's project work" (see Appendix C). During the kindergarten teachers' discussions, these teachers make a checklist for each project. Different checklists are made for each of the students' age groups and for each level. Before beginning a project, the teachers make a checklist for

each subject area based on the National Kindergarten Curriculum. In other words, when composing checklists, the teachers consider the students' learning activities related to a project's topic, what the students will learn, and what they should know to meet the standards in each subject area. During a project, the teachers keep their checklists in mind and assess the students' learning activities and individual products at the end of a project. Betty said, "I make two copies of each checklist. One is for the children's parents, and the other is for the children's future Grade One teacher." When her students enter elementary school, she sends all her checklists to the Grade One teacher. They help him or her to understand the students' stage of development and knowledge in each subject area.

Factors considered when assessing students' performance and work during a project.

When assessing their students' performance and work during a project, both Amy and Betty consider academic achievement, the students' understanding of project work, and the students' readiness for the next session. The teachers stated that the students' parents expect their children to improve their academic skills through project work and also want their children's teacher to focus on academic activities such as writing or reading. Thus, in terms of the parents' demands and the Korean cultural and educational background, the teachers assess their students' performance and work during a project by focusing on the students' academic activities and achievement.

The teachers stated that during a project, they assess whether all the students not only understand all activities related to the topic of each session but also can complete the teachers' intended project work. Before beginning the next session, the teachers make sure that their students have understood the topic of the current session. When some

students are not ready for the next step of a project, the teachers help them to understand what they have been doing.

Amy said, "I always do my best to help the children be active instead of passive during project work." She also stated that she tries to assess her students' performance and work by not having preconceived opinions related to the students' responses about what they did when she used other teaching-learning methods. Amy reported that for a project involving an entire class, she has difficulty assigning work that is appropriate for all levels of students. As well, because of the lack of information about assessment, she has difficulty assessing all the students' performance and work.

Betty said, "I focus on the children's representational activities such as drawing and writing in order to assess the children's performance and work on a project." She believes that drawing in particular provides the students with a method to represent their ideas about a project's topic. When she assesses the students' project performance and work, she considers their unusual or unexpected ideas about a topic. In other words, Betty tries to provide her students with opportunities to investigate a project's topic in a variety of ways.

Gathering information on the students' performance and work.

When using the project approach, the teachers gather information on the students' performance and work. For example, both teachers take photographs of the students' performance and gather their products such as worksheets, drawings, and writings. The teachers use the information from these sources for assessment, a display at the end of a project, and a portfolio folder for each student.

Amy said, "I actually try to memorize the children's specific ideas, activities, and responses related to a topic in the daily project work and then I assess their performance and work by relying on my memories." She also said, "I already know that I should do something with the children's performance and products for assessment purposes. But I don't know how to assess their work, so I don't assess it during a project or at the conclusion of each daily work session."

Betty said, "In my teacher's diary, I record anecdotal records about the children's performance during the day and I also add notes on each child's products including drawings, writings, worksheets, and so on." She stated that these notes are very helpful when she is trying to determine the students' development and to evaluate their performance and work at the end of a project. Moreover, at the end of each day's project work, Betty has conversations with the students about it. At this time, in order to prepare them for the next session, she reminds them of what they have learned and achieved. She mentioned that she also asks the students to use a display or an oral presentation to represent their performance and work at a later project session.

Curriculum objectives and the students' performance in project work.

During the interviews, I asked the teachers about the relationship between the project approach and the kindergarten curriculum. The teachers believe that the project approach fits well with the integrated curriculum because a project includes content that students need in all subject areas in the National Kindergarten Curriculum. Particularly, when assessing the students' performance and work, the teachers refer to the content of all subject areas.

Amy said, "I don't perceive a significant relationship between project work and the National Kindergarten Curriculum even though the project approach is part of the integrated curriculum." In other words, during project work, she does not try to create an interrelation between the students' project performance and the contents of all subject areas in the curriculum. She mentioned, "I focus on only the students' project work and I write down notes about their work." In addition, without being concerned with a specific subject area, she compares each student's learning activities with those of the other students in order to assess their performance.

On the other hand, Betty said, "I prepare materials related to the National Kindergarten Curriculum, such as checklists and lists of the contents of the children's expected activities." While assessing her students' performance on a project, Betty applies a checklist that was developed at the teachers' meetings about the project work. She believes that project work should achieve the purposes of a project, so she observes the students' performance and work and then uses her own standards to assess them. Moreover, after a project has been completed, she determines the standard and level of the students' performance and work based on the content of all the subject areas in the curriculum.

The teachers' concerns related to the students' achievement on projects.

In their diaries, the teachers write whatever they want to record about their students' performance and work on a project. Thus, I asked them about their main concerns when they write down notes. I believe that teachers' anecdotal records including their journals, short comments, and their daily notes are useful materials for assessing students' performance and enhancing their development.

Amy said that she does not often make notes about her students' performance or work. She reported that instead, she tries to memorize the students' activities and attitudes toward other students, and make notes for assessment purposes at the end of a project, a term, or a school year. When she learns about a child's ability or attitude, she makes a note in her teacher's diary and uses the note for assessment later. For example, a child might have difficulty expressing himself or herself at the beginning of a school year, but later can express ideas and feelings about a topic. In order to assess the child's improvement, Amy makes a note in her teacher's diary. When using the project approach, she considers whether the students' performance and achievement on a project have achieved its purposes.

Betty said, "My first concern related to the children's achievement is the changes in their behaviours, attitudes, and abilities during the process of project work." Before starting a project, she records the students' expected activities, questions, and answers to set her standards for assessment. During the project work, she focuses on the process of the students' development. In other words, she takes notes about how the students improve their abilities or if and how their attitudes have changed after a project has been completed. If necessary, she talks with her students about their changed behaviours or attitudes. For example, when a child asks a question about a topic and then finds out an answer, Betty tries to make a record of the child's activities and use it for assessment purposes at the end of the project.

Betty also focuses on the difference in the students' performance when she uses the project approach and when she uses other teaching-learning methods. In other words, she compares her assessment records for a project with her records for other teaching-

learning methods. During project work, she tries to find out if a child is developing in particular areas. For example, she mentioned that one of her students seemed to have a sufficient vocabulary, but in project work, he could not express himself and did not actively involve himself. Betty tried to find out how to involve the child and improve his performance in project activities. In addition, Betty mentioned, "I take notes about children's performance and then I use them later when I communicate with the children's parents." Using her records of assessment, she has conversations with the parents at regular parents' meetings or by telephone.

Preparations for the next project session.

Before starting a project, teachers set up its framework and list the expected project activities. The teachers then try to follow their schedule or teaching plan. However, depending on students' interests and a project's activities, teachers need flexible schedules for project work. In this section, I will explain how the two teachers implement projects in relation to students' interests and activities.

Amy said, "The children's project activities in a current session don't have much influence on the next session because I try to follow my own schedule, which I set up before starting the project." She also mentioned, "I don't have enough time to review the daily project work that the children have completed and to rethink the project's schedule for the next session." She said, "All my routine work after school prevents me from spending much time on project work."

After completing the daily project work, Betty takes time to review each lesson. When she studies the students' products and realizes that some of her students did not achieve the expected results, she changes the planned project work to fit with the

students' level of achievement. In addition, she said, "As the children's interests in a topic vary over time, I change the schedule of project activities within the range of the framework of a particular project." For example, when her students are interested in a specific part of a topic, she prepares much information and many materials related to the topic for the next project session. On the other hand, when the students lose interest in a topic, she tries to provide them with alternative project work. Betty also said, "I always share my ideas with other teachers and I obtain information on how to make a project's schedule flexible in response to children's interests."

Assessment Practices after Completing a Project

Evaluation of learning in relation to the standards for each subject area in the National Kindergarten Curriculum.

I wanted to know how, when assessing the students' performance and work on a project, the teachers reflect the standards for each subject area in the National Kindergarten Curriculum. Amy said, "I don't think about the relationship between the assessment of project work and the standards of the curriculum." In addition, she believes that the relationship between the assessment of project work and the standards of the curriculum depends on the nature of a project's topic. For instance, when a topic is an animal such as a rabbit, a puppy, or a cat, she believes that the project work will not be related to the content of each subject area in the National Kindergarten Curriculum. On the other hand, if a topic is a market, the project work will be related to the content of the curriculum. In other words, she reported that if a project's topic is related to units in the National Kindergarten Curriculum, including a family, a school, or a community, her

assessment of project work would be influenced by the content of each subject area in the curriculum.

Betty believed that as a learning-teaching method, the project approach is related to the National Kindergarten Curriculum. Thus, she said, "My assessment of project work is also influenced by the standards of each subject area in the curriculum." She supported her belief by mentioning the project approach's use of checklists. She refers to the curriculum's description of the content of each subject to make a checklist for assessing students' performance and work on a project.

When assessing students' project activities, she divides her checklist into each development area including language, cognitive, and physical development. She also said, "Assessing not only the children's project activities but also all their other school activities is useful." In addition, when kindergarten teachers develop their kindergarten's own curriculum before the beginning of a new school year, they refer to their checklists for project work and then revise and renew their own curriculum.

Sharing information about the students' activities with their parents.

I believe that one of the best ways for teachers to understand students' learning activities and attitudes is to develop a close relationship with the students' parents (McAfee & Leong, 2002; Wortham, 2005). With information about students, including information about their families, environment, and activities at home, teachers are best able to assess the students' performance and provide opportunities for them to develop. At the end of a project, Amy and Betty display all the students' work for the project and invite the students' parents to their classrooms. When the parents come and see what their

children have done, the teachers provide general information about the project. At that time, the students have an opportunity to explain their work to their parents.

Usually, after a project has been completed, Amy and Betty gather each student's project work such as drawings, writings, and pictures and then make portfolio folders for all the students. The teachers send a folder to each student's parents so they can see what their child did throughout a project. In addition, the teachers call the students' parents and talk about the students' project performance and work.

Betty said, "I try to contact the children's parents as much as I can during a project and I usually communicate with the parents by telephone except when the parents' personally visit the kindergarten." She also mentioned, "I call the parents once a week and talk about what is going on in a project." She makes as many notes as she can for each student during a project, and she then sends her notes to the parents or uses them as the basis for a telephone conversation. In addition, when she sends each student's portfolio folder to the parents, she encloses a checklist for their child to enable the parents to understand their child's development. To improve her relationship with parents when she is using the project approach, she gives homework for the parents. For example, she asks them to help their children find information related to a project's topic by using books, the Internet, and other sources. Through this kind of activity, Betty believes that the parents can be involved in project work and have an opportunity to work with their children.

The use of assessment information for the next project or class activities.

During each school year, the kindergarten provides students with two or three projects, depending on the duration of the projects, the kindergarten curriculum, and the

nature of the topics. After completing a project, the teachers have a vast array of information about it, including students' portfolios, pictures of project work, anecdotal records, and so on. Thus, I wanted to know how a previous project is related to a subsequent project in terms of project activities, frameworks, teachers' preparations, and selection of a topic.

Amy said, "I don't consider all information from a previous project useful when I am developing my next project, but when I plan my next project, I refer to the previous project in some ways." She might eliminate the work that was difficult for her students to do and revise or add project activities that the students were interested in.

Like Amy, Betty mentioned, "I revise and supplement project work to meet the children's interests and I use information about a previous project as a positive aid for my teaching plans." After completing each project, she obtains a great deal of information about each student, including information about each student's abilities in each subject area, development levels, and personality. Thus, she believes that in the next project with the same class, she can provide the students with various activities appropriate for each student's developmental level.

Betty believes that the previous project remains in the students' memory even though the project has been completed. Thus, when she decides on a topic for the next project, she refers to the prior topic. For example, during a building project, the students visited and explored many buildings such as a hospital, a fire station, and a post office. At the end of the building project, the students might still be interested in one of the buildings they visited, such as the hospital. For the next project, Betty might do a hospital project. Furthermore, she mentioned that she applies the students' previous project work

to their other activities. For example, when her students do learning activities related to mathematics, she reminds them of the basic concepts of the numbers they learned in the ambulance project.

During my interviews with Amy and Betty, I found that they had similar and different ideas about each interview question, particularly when the question was about assessment practices. To help keep track of the two teachers' ideas concerning assessment, Table 5 illustrates their differing ideas concerning *when*, *what*, and *how* to assess, drawn from the interview data.

Table 5

Amy's and Betty's Similar and Different Ideas Concerning When, What, and How to Assess

When	What	How		
		Similar ideas	Unique to Amy	Unique to Betty
Before getting a project started	Students' existing knowledge	• G & T program • Circle time or shared story time	• Nothing unique	• Conversations with students' parents individually
	Information about and guidelines for assessment	• Sharing and getting information at teachers' meetings in the kindergarten	• The guidelines of G & T program • Knowledge from a university lecture	• Materials (Internet, books, journals, magazines, etc.) • The National Curriculum
	Assessment practices for students' learning	• Worksheets	• Oral questions and answers	• Recording students' daily activities in her teacher's diary • Conversations with their parents
During a project	Forms of assessment used in the project approach	• Students' project work (writing, drawing, constructions, etc.)	• Recording students' behaviours • Worksheets • Referring to students' self-evaluations presented orally or in writing	• Teacher's notes about individual students' behaviours and attitudes during project work • A checklist made by herself for each project
	Factors considered when assessing students' performance and work	• Academic achievement • Students' understanding of project work • Students' readiness for the next session	• Students' active behaviours • No preconceived opinions related to the students' responses	• Students' representational activities • Students' unusual or unexpected ideas about a topic

When	What	How		
		Similar ideas	Unique to Amy	Unique to Betty
During a project	Information on students' project work	• Photographs of students' performance • Gathering students' products	• Remembering what the students have done	• Writing anecdotal notes about students' performance during each day's project work • Conversations with students
	Curriculum objectives and students' performance	• Not shared	• No a significant relationship between project work and the National Curriculum	• Materials for project work related to the National Curriculum (checklists, lists of students' expected activities…)
	Teachers' concerns related to students' achievement in the anecdotal notes	• Students' changed attitudes, behaviours, and improved abilities	• Not often used	• Making standards for assessment • Different performances for the project approach and for other teaching-learning methods • A way of communicating with students' parents
	Preparations for the next project session	• Not shared	• Not much influenced by a current session • Following her own schedule	• Reviewing each lesson for changing the planned project work to fit with students' level of achievement • Flexible schedules depending on students' interests in a topic
After completing a project	Evaluation of learning related to the National Curriculum	• Not shared	• Not related • Depending on the nature of a project topic	• Related • A checklist for the project approach based on standards of the curriculum
	The way of sharing information with students' parents	• Displays of what students did in all of the project work • Portfolio folders for all students	• Communications with the parents at the end of a project	• Ongoing communications with the parents during a project • Sending a checklist to the parents
	The use of assessment information for the next project or class activities	• Revising project activities to meet students' interests in the next project	• Does not use information from a previous project	• Obtaining each student's abilities in each subject area, development levels, and personality from a previous project • Referring to a previous topic to extend students' interests

In her answer to my question about forms of assessment used in the project approach, Amy mentioned, "I use my records such as anecdotal notes in order to assess the children's behaviours during project work." However, in her answer to my question about how she gathers information about students' project work, she did not mention

using her anecdotal notes as a way of assessment. She said, "I try to memorize the children's performance of project work and then to base my assessment on my memories." In addition, in her answer to the later question, she stated, "I don't often use my anecdotal notes." From Amy's answers to these questions, I believe that she recognizes that anecdotal records can be used for assessment purposes in the project approach, but that she does not use them often for three reasons. First, she said that because of the lack of information about assessment in the project approach, assessing all the students' work and performance is difficult. Second, she does not know how to assess the students' project activities and work, so she does not do any assessing during a project or at the conclusion of each day's project session. Finally, as she said, she does not have enough time to review daily project work and to rethink the project schedule for the next session, because she has a great deal of routine work to do after school.

At the end of her interview, Amy said, "I will try to write anecdotal notes more often during the map project than I had on the previous project in order to better assess the children's project activities and work." She also wanted to directly experience how making more anecdotal notes might improve her assessments. She believes that the use of anecdotal records can be a viable alternative assessment method in the project approach.

CHAPTER 5

Analysis of Data - The Map Project

Introduction

In this chapter, I will summarize the map project undertaken by the two participants in my research in order to better understand the actual assessment methods used by teachers undertaking the project approach with students in kindergartens in Korea. I will use my observations, conversations with the teachers, and their daily notes in order to explain the process of the project, the teachers' interactions with their students during project work, and their perceptions of their assessment methods during the project.

In both classes, this project was undertaken by the entire class and continued for four weeks. Students worked on the project from Monday to Friday for about two hours each day. Both classes did project work on the same topic during the same period. After completing each project session, the teachers met to discuss their reflections on the students' activities and to prepare for the next day.

Teachers' Preliminary Planning

Selecting a Topic

At the beginning of a new school year, teachers consider topic selection in accordance with the students' actual interests, which teachers learn by observing the students' daily lives. The teachers believe that topics based on the students' circumstances help to increase the students' interest and to capture their attention. The map project supported this belief. In Korea, some students, even those in kindergarten, walk to school on their own, and occasionally, they get lost. The teachers' observations of students' maze or puzzle games provided further support for the project. Before starting

the map project, the teachers discussed the development of the whole project, what they expected their students to learn, and how areas of the National Curriculum could be effectively integrated into the project.

Discussion among Teachers

Before starting the project work with their students, the teachers discussed their plans for the map project amongst themselves. They talked about its framework, its development, possible fieldtrips, the display of the students' work at the end of the project, and so on. The teachers decided to not divide the map project into the usual three phases typical of the project approach. Instead they planned to focus on the sequence of the project's activities and apply it to the overall framework of the map project. Finally, the teachers divided the project into seven main events based on the sequence of learning activities.

During these discussions, each teacher, especially those who had a great deal of experience with the project approach, shared her prior experiences. In this way, more experienced teachers helped those like Amy to make their own plan. As a more experienced teacher, Betty shared her ideas about project work with other teachers and discussed the map project with the teachers in the class for six-year-olds.

The Activities in the Map Project

The teachers hoped that by understanding and making maps, the students would develop several abilities: problem-solving using scientific and intuitive methods, finding and handling information, interacting and cooperating in group activities, and symbolizing ideas with two or three dimensions. The students' potential development in the map project was linked to the *Inquiry* component in the National Kindergarten

Curriculum and to this component's sub-areas of 'Logical-mathematical inquiry' and 'Creative inquiry.'

The area of 'Logical-mathematical inquiry' includes classification, sequence, measurement, and geometric shapes. 'Creative inquiry' focuses on investigating immediate surroundings and learning to think creatively. Moreover, the National Curriculum provides several activities in each sub-area of each component. Some activities related to the map project are classifying and sequencing, relating basic measurements to everyday life, understanding the basic concept of spaces and shapes, having interest in and exploring one's surroundings, thinking flexibly, and thinking differently and creatively (Ministry of Education and Human Resources Development, 1998).

To explain the students' project work and the teachers' assessment practices for the map project, I will describe the process of the project work based on the framework's regular sequence. The data are drawn from my observations, interviews with the two teachers, and some of their daily notes related to the students' project work that I did not have a chance to observe. I will first describe the students' general activities and attitudes, and I will then discuss each teacher's responses and assessment practices during each project session.

1. Children's Previous Experiences

In this session of the project, the teacher learned what the students already knew about a map, a direction, a street, and so on. In addition, the teacher learned how the students were able to represent their experiences related to the topic. The teacher started the project by talking about getting lost. The students then shared their experiences of

getting lost in a street, in an amusement park, and in a department store. The teacher also asked the students about the direction from their homes to their kindergarten. Most did not know where their kindergarten is in relation to their homes.

As they became interested in directions and streets, the teacher provided the students with blocks to make streets in the classroom. The students then made their own streets with blocks, and they called the streets a 'highway,' an 'intersection,' or 'the street in my village.' Students also conducted a 'treasure hunt' in the classroom, an activity that appealed to their interest in the things around them that were part of their daily lives. Throughout this session, the students had an opportunity to share their experiences of the topic and to work with their classmates. In preparation for the next session, the teacher helped to sustain their interest in the topic.

During this session, Amy tried to provide more opportunities for her students to investigate the topic. She prepared several books about a street and a map and showed pictures in the books to the students. In the block area, she made streets and buildings with the students. The students were very excited during their play in this area. After completing this session, Amy said that maintaining the students' interest in the topic was difficult because the students had many opportunities to become involved in other activities in the kindergarten.

After completing this project session, Betty said that she had tried to interact with her students in as many ways as she could. For example, when she shared her experiences of the topic with the students, she gave them many opportunities to present their own experiences. After listening to her students, she asked them questions to maintain their interest and give them new ideas about the topic. She believes that the students can

improve their skills in areas such as listening and speaking. She also took as many notes as she could about the students' attitudes and activities during the project work.

2. Investigation outside the Kindergarten

As the students were interested in streets, the teacher decided to take the students for a walk around the kindergarten. During their walk around the block, they were excited by what they saw and were saying to one another, "I have never been on this street," "Look at the building! I am wondering what is inside," and "This is the way to go to a grocery store." Their excitement continued when they were back in their classroom. The teacher then asked the students to make a drawing of what they had seen. Most drew whatever had most impressed them (see Figure 2). They drew buildings, cars, and streets, and all their drawings were different. Most of the directions and locations of the buildings and streets in their drawings differed from their actual orientation and placement.

Figure 2. A Child's Drawing after the First Investigation outside the Kindergarten.

The students themselves realized that their drawing were different. For example, one child had drawn a restaurant on one side of the kindergarten, and another child had drawn the same restaurant on the opposite side. The students were curious about why their drawings were different. After a few minutes, they realized that one of their drawings was wrong, but they did not know why. Thus, they wanted to go outside again and explore the kindergarten's surroundings. After another investigation, the students again drew what they had seen. However, the locations and directions of buildings were still idiosyncratic. By observing the students, the teacher realized that they did not yet have a standardized understanding of directions.

While looking at the students' drawings, the teacher thought about how to use the project work to help the students to understand directions. At teachers' meetings, the teachers shared their ideas and decided to interest the students in streets rather than buildings. The teachers believed that through discovery, the students would understand directions and locations, so the teachers planned another excursion with this aim.

In the next session of Amy's class, the students were very excited about being outside the kindergarten and among their peers. They shouted and talked to each other about what they were seeing. Amy seemed to have trouble leading her thirty students down the street. She asked them to remember what they saw so that they could draw it later in the classroom. After the field trip, Amy told me that she had expected the students would understand the locations and directions of the buildings they had seen during the field trip, but they did not. In addition, in their conversations after the field trip, it was clear that what the students had attended to was diverse: some students were interested in the people, cars, and dogs they had seen in the street rather than the locations or

directions of buildings. Amy thought that she needed to talk to other teachers about how to develop the next project session.

On the same day, Betty's class also went out and investigated outside the kindergarten. The students were very interested in buildings that they had never looked at closely before. While taking their own walk around the kindergarten, the students talked to each other about whatever they were interested in. Occasionally, Betty asked guiding questions related to the buildings' directions and locations and provided her students with opportunities to think about this topic.

After the field trip, Betty's students returned to their classroom and drew what they had seen in the street. The students drew buildings, people, or objects and presented their drawings in front of the class. Betty told me that the students had drawn the buildings that had impressed them but had ignored the buildings' directions and locations. She also said that the students had difficulty remembering directions and locations. As Betty interacted with her students, she helped them to remember what they had seen. For example, she talked to them about her own experience of the field trip and shared her memories of a specific building.

3. Focusing on Children's Sense of Direction

In this session, the teacher focused on the understanding of directions such as right and left, north, east, south, and west, the front and rear, and up and down. The teacher stated that the basic knowledge to be learned from this project was a sense of direction, so she played games such as the 'True or False' game with the students to help them develop a sense of direction. In this game, the teacher asked the students, "This

chair is on my left side, true or false?" or "The piano is on the right side of this table, true or false?"

In a playground, the students continued to learn the difference between right and left. They played a direction game called the 'Right and Left' game, in which one child told the others, "Go to a play equipment on your left," and then the students answered, "We are on the swing." Another child then asked them, "Go to a play equipment on the right of the swing." The teachers expected that these kinds of games would help students to understand the difference between left and right.

Eventually, most students understood where objects were in relation to their location. For example, a child said, "This swing is on my right side and the slide is on my left side." However, when the students turned around to leave the playground, they were confused because all directions had "changed." When they stood and faced toward a building, the swing was on their left side. On the other hand, when they turned back, the swing was on their right side. The students wanted to know the reason, and their curiosity about it increased. After continuous play in the classroom as well as in the playground, the students understood the meaning of "right" and "left."

To help the students understand the concept of directions, the teacher provided worksheets as an extended project activity focused on increasing students' understanding of directions during their regular class activity. Usually, the teacher prepares worksheets related to a project's topic in order to assess the students' knowledge and determine if any of the project work needs to be changed. After sharing their ideas about worksheets, the two kindergarten teachers made their own worksheets for the map project. One of these asked the students to draw both their hands. First, the students put their left hand on a

piece of paper and used a pencil to trace the hand's outline. They wrote "Left Hand" above the outline and identified the thumb and each finger. The students then repeated this process for their right hand (see Figure 3).

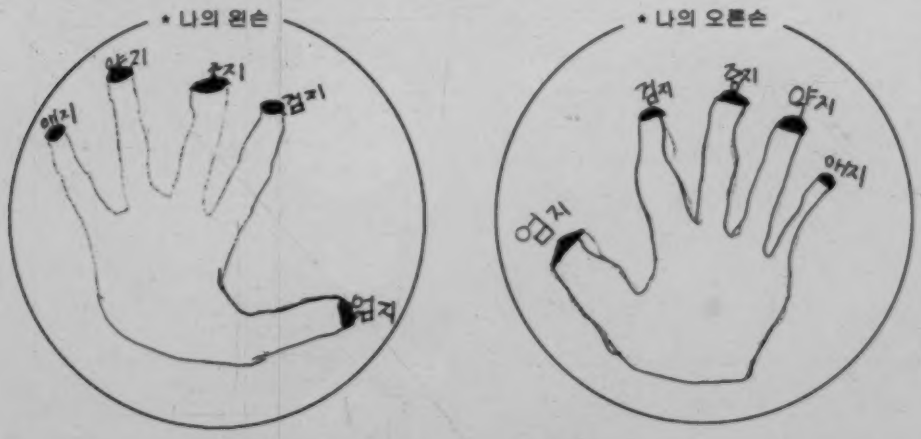

Figure 3. My Left and Right Hands.

The teacher provided students with a second worksheet to help them understand the concept of "right" and "left" (see Figure 4). On this worksheet made by the teachers, the students responded to a series of questions asking them to circle the applicable object. For example, one of questions was "Which animal is located on the right side of the fish?" In addition, during a music class, the students were asked to make rhythmic movements with their right and left hands while singing a song. The teacher put a sticker on the right hand of those students who still could not distinguish between their left and right hands.

Figure 4. A Worksheet for Right and Left Directions.

During this session, students took a long time to completely understand the concept of directions such as right, left, front, and rear. At the beginning of this session, the students thought that an object's directions were always fixed, so that, for example, a swing was always in the same direction in relation to a viewer's location. Through repeated play, students could understand that directions change depending on a viewer's

location. Moreover, as they experienced directions by using their bodies, they obtained a basic knowledge of the concept of directions.

In Korea, many parents help ready their children for elementary school by enrolling them in kindergarten where it is expected they will learn the 3R's (reading, writing, and arithmetic) and English (Cho, 2002). As well, some parents begin the readiness process prior to kindergarten, supplying their children with materials to learn logical-mathematical skills or literacy at home. The use of worksheets is therefore expected by parents and part of the teaching and learning culture in kindergartens, and it generally regarded as a good way to prepare young children for elementary school.

According to Carlton and Winsler (1999), "school readiness" includes two concepts: readiness to learn and readiness for school. "Readiness to learn" means "a level of development at which an individual is able to learn specific materials" (p. 338), and "readiness for school" means that the individual will be able to master successfully the material in a typical school curriculum (Carlton & Winsler). In the Korean context, teachers believe worksheets are appropriate for kindergarten students' level of development and that they will prepare students for success in elementary school.

At my meeting with Amy during this project session, she said that she did not know how to explain why the swing's direction seemed to change when the students turned around, so she had difficulty helping them to understand why "right" and "left" change depending on one's location. As well, Amy explained that the students were very excited about drawing their own hands. Some of them compared the size of their hands with that of their peers' hands. In reference to the worksheet, Amy explained that the students completed it after most of them had learned the meaning of "right" and "left," so

most completed it easily, and she helped those who still did not understand the concept of direction.

During this project session, Betty tried to help her students to obtain a basic knowledge of directions through the students' play. For example, when the students played among themselves after finishing the 'Right and Left' game, she was watching them to learn how many understood the meaning of "right" and "left." For students who did not understand it yet, Betty provided more opportunities for project work. She believes that the concept of "right" and "left" is basic for understanding the concept of direction on a map.

During the interview with Betty at the beginning of the map project, she did not mention the use of worksheets for a project. However, in this project session, she provided the students with worksheets to help them to understand the concept of "right" and "left." She made the worksheets after discussing them with other teachers. Amy, who mentioned that she used worksheets in the pre-project interview, utilized them as an assessment method to determine her students' understanding of "right" and "left."

4. Focusing on Reading a Map

For this session, the teacher asked the students' parents to provide their children with a map to bring to school. Most students brought a map of some sort, including a map for transportation and travel for foreign visitors; an amusement park map; and a travel guidebook. One child brought a compass explaining, "My father told me that we need a compass when looking at a map." Another child then said, "Yes, I saw on TV that people need a compass with a map to find a street."

The students unfolded the maps on the floor and looked at them. Most students were particularly interested in a map of the area around the kindergarten. They were surprised that on the map, every street and building around the kindergarten was in exactly the same location as its real counterpart. The students wondered who had made the map and how that person had known the exact locations. In addition, they found the street they had walked on and then began to compare the map with their own drawings. The students realized that their own maps were very different from the samples they had brought from home. They were also interested in intersections. They wanted to go out and observe one, and the teacher arranged a spontaneous field trip to the nearest intersection.

During their observations at the intersection, the students recognized that it was difficult to see the cross shape (+) that had appeared on the map. The students were also curious about how a person could make a map depicting the huge intersection and surrounding buildings. Back in the classroom, they searched for information in books and on the Internet, learning that the basic way to make a map was to go to a high location and look down on the area being mapped.

During the teachers' meeting, it was suggested that one way to explore intersections would be to ascend to the roof of a building that looked down on the intersection. The students as a group could go up on a rooftop and observe the scene below. By doing so, they could see for themselves that the intersection was shaped like a cross. Samples of their drawings from this experience are included in Figure 5. On the basis of these drawings, the teachers concluded that the students understood the idea of an intersection or cross street.

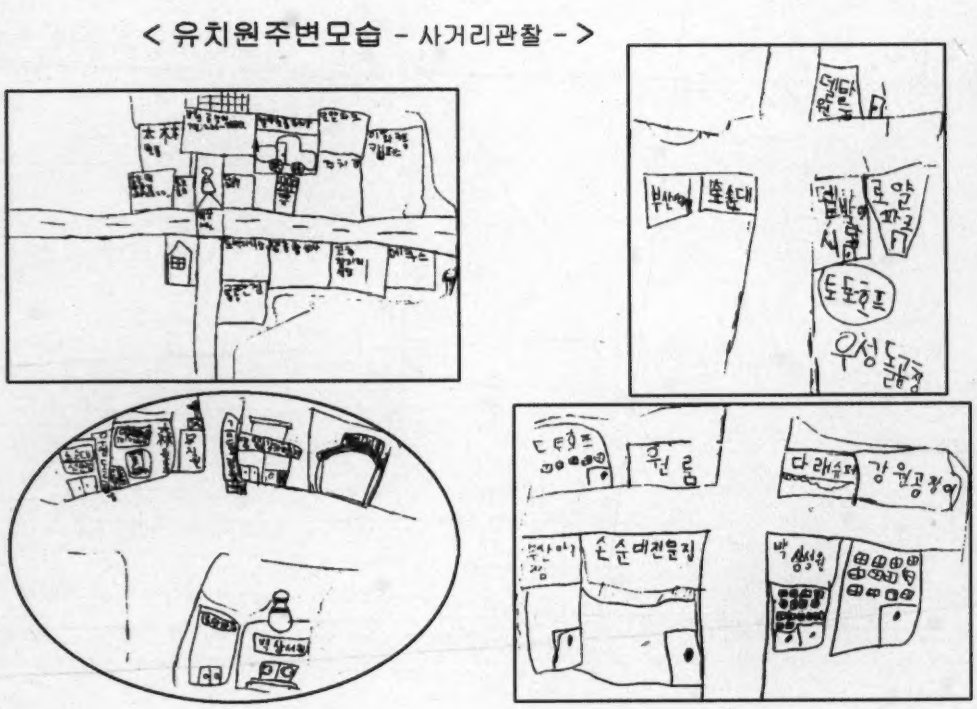

Figure 5. The Students' Drawings of an Intersection.

In their investigation of intersections, Amy and Betty believed that the children should themselves come to the conclusion that a view from above would reveal the cross shape of the intersecting streets. However, when Amy's class went out to find an intersection, the students did not immediately link their knowledge to the actual scene. Before going out, students revealed an understanding of what an "intersection" is and how a map can be made. However, they were unable to find an intersection and a location to look down at one on their own. After a while, Amy led her students to a restaurant's rooftop. On the rooftop, the students did not have enough time to observe their surroundings and to draw an intersection because they were in hurry to return to their classroom. After this field trip, Amy said that she had not had enough time for all her

students to investigate an intersection. She expected that her students would find one easily and that on their own they would ask her to find a high place so they could look down on the intersection. However, since they did not do so, so she pointed out an intersection to them and led them to the rooftop. She told me later that she felt this field trip had been a teacher-centered activity.

After learning about map-making through books and the Internet, Betty's class explored intersections via a field excursion. Like Amy's students, Betty's did not focus their attention on an intersection. Instead, they were interested in walking in just one direction, observing the general street scene. Betty had to patiently shift their interest to an intersection, where she reminded the students of the basic way of making a map. She asked them, "Have you been to a high mountain recently?" They then shouted that they should go a high place to look down at the intersection and draw it. In addition, Betty told me that the students often have difficulty identifying and solving a problem on their own in project work. When she finds that the students are having problems during project work, she always tries to give them ideas and useful information. She also said that the students' problem-solving ability is important in project work and that she helps her students to improve this ability.

Through the process of investigation at the intersection, the students developed their spatial sense, especially their sense of perspective. According to Piaget and Inhelder (1967), young children can recreate the perspective of other people, but as Clements (1998) suggested, it always turns out "to be from the same point of view… their own!" (p. 3). However, such experience helps young children to develop their understanding of perspective (Clements). In this session, before looking down at the intersection from the

rooftop, the students had difficulty understanding the shape of an intersection as map-makers perceive it. The teachers seemed to intuitively understand that geometry is important in helping young children to interpret and reflect on their physical environment (Clements), although they did not reveal knowledge of the scientific study in this area (Jovignot, 1995; Liben & Downs, 1993; Liben, Kastens, & Stevenson, 2002; Liben, & Yekel, 1996).

5. The Concept of Direction

In this session, the teachers studied various maps with the students and directed their attention to a compass rose on one of the maps. The students then noticed the various compass roses common on several maps and talked about them. The students did not know what a compass rose signified. However, they thought it was meaningful, for they saw one on each map.

In their classrooms, the teachers hung a compass from a string to maintain the students' interest in the maps. Whenever the students jumped on the floor, the red needle of the compass moved. Interested in the needle's movement, the students continued to jump on the floor. They realized that when the red needle was stationary, it pointed in only one direction. As the students were interested in the compass, the teachers provided them with different kinds of compasses such as a general compass, a compass in a watch, and a gyrocompass.

At the beginning of the previous session, one child had shared that he learned how to use a compass by watching a program on television. His reference to learning from television reinforces the increasing role of this medium in children's lives in Korea, including its potential as a educational tool (Abelman, 2004). Visual media such as

television and pictures can effectively develop children's cognitive, linguistic, moral, scientific, perceptual, and social skills (Abelman; Clarke & Kurtz-Costes, 1997), and in the example here, it links the home and school learning settings. Although the educational benefit depends on the quality of the content (Abelman; Clarke & Kurtz-Costes), as children watch television, they have many indirect experiences that can be particularly relevant to project work. During this project, some of the students evidently learned the rudiments of scientific investigation by viewing television programs that introduced them to the idea that a compass can be useful when using a map.

In their exploration of compasses, a group of students in Amy's and Betty's classrooms recognized that all the red needles in the compasses pointed in the same direction. These students then located compasses around the classroom and observed that the red needles continued to point in the same direction. At this time, the students did not know that the red needles pointed to the magnetic north.

As this small group wondered about the needles, another student suggested using a compass to study a map of the area around the kindergarten. Through the process of studying the map and using related materials such as books, other maps, and pictures of the points of a compass, the students hypothesized that the red needle in a compass always pointed to the north. The students continued to observe the results of putting compasses in different locations, concluding that the red needle always pointed to the north, and that the other points of the compass indicated south, east, and west.

In an interview after this project session, Amy said that it had been the most difficult one for her since the map project had started. Because she believed that project work should be child-centered, she thought that her students should learn the concept of

directions by themselves, but she could not find a way to help them to do so. "I knew that the red needle of a compass always points to the north," she said, "but I did not know how to deliver this knowledge to the students." She followed the suggestions that the teachers had discussed at their meeting, and her students finally became interested in a compass's red needle and also curious about the direction in which the red needle pointed.

Betty also used various compasses and compass roses to interest her students in the concept of directions. After our conversation following this project session, Betty told me that during child-centered project work, she always tries to ask her students a question about a project's topic. She believes that a teacher should provide students with various directions to help them solve a problem by themselves instead of providing a direct solution for the problem. She commented, "Asking the kind of question that will help students in their project activities is always difficult." To help her students to understand the concept of directions, Betty provided a variety of compass roses from materials related to maps, such as books, magazines, and pictures of compass roses. Some students then put the various images of compass roses together and looked at them collectively. The students shared their ideas about the red needles of compasses, the shapes of compass roses, and the direction of the red needles. The students seemed to be curious about the direction of the needles and discussed the compass roses.

The students' project activities in this session were intended to help the students to understand the basic concept of directions. However, the students did not completely understand this concept even though they understood the significance of a compass. At the end of this project session, the students developed their ideas based on their

hypothesis regarding the red needle in a compass, and they confirmed the hypothesis by observing a compass's red needle and a compass rose.

6. Finding a Specific Place by Using a Map

At the teachers' meeting, plans were made for a field trip involving the use of a map to find a specific place. The teachers anticipated two destinations where the students would want to go and discussed how these destinations could be reached on foot. The teachers expected that the students themselves would choose a possible place to go.

During their project time, the students used a map to find a destination. In Betty's class, the children decided to go to the City Hall. One child had initially said, "Let's find the City Hall on the map," and another child shouted, "I found it, found it! I got it!" Other students said, "Yes, the City Hall is on the north side from our kindergarten." The students continued to find specific destinations that were familiar to them. Eventually, a child shouted, "Why don't we go out and find somewhere with a compass by ourselves?" Most of the other students agreed, and they then negotiated with one another to choose their destination, deciding together on the City Hall.

Betty played a definite role in their selection of a destination for the field trip. She thought that the large city-wide maps the students were examining covered too much territory, so she provided them with a small-scale map that included the area around the kindergarten. The students then focused on nearby places that they could walk to. When the students chose the City Hall for their destination, Betty supported their decision.

The students discussed how to prepare for the trip. One group drew a tentative route to their destination, and others made a list of what they would bring, such as a compass, a camera, and a map (see Figure 6). In addition, the students used blocks to

make imaginary streets leading to the City Hall. While looking at a map, they made "streets" pointing towards the north, the west, and so on. At the end of the session, the students confirmed the directions on their "block town" by using a compass.

Figure 6. A Plan for the Field Trip.

During the actual field trip, the students realized that several routes would lead to the City Hall from the kindergarten. The class traveled as a group, and at each intersection, the students used a compass to try to determine their direction. When they arrived at their destination, they were very excited and satisfied with themselves. One student said, "I cannot believe that I arrived at the City Hall by myself." For a moment, the students celebrated their trip by themselves in front of the City Hall. They had an opportunity to take a photograph and talk about their feelings concerning the trip.

This field trip more than others required a great deal of planning by Amy and Betty. At the teachers' meetings, they discussed in detail what they had to prepare for the field trip. They tried to anticipate what their students would do and what activities should be included. In addition, Amy and Betty said that before a field trip, they are always concerned about unexpected accidents. Thus, they cautioned their students to take extreme care on the streets.

When the students were choosing the destination for their field trip, they made different choices and persisted in their opinions. Amy tried to mediate this process and asked them why they wanted to go the places they had chosen. As she interacted with the students, she gave them an opportunity to think about which places would be most appropriate to visit. At the end of their discussion, all the students agreed to visit the chosen destination.

In the end, though, Amy's and Betty's classes visited different locations. When Amy's students left the kindergarten for their destination of a superstore, they seemed to be very excited about looking at buildings, cars, people, and so on. After the field trip, Amy said that she had had difficulty keeping them focused on project activities such as

finding a route, looking at a compass, and understanding a direction. She also told me that the trip had taken more time than she had expected because the students stopped at each intersection and tried to use their compasses. She said that the students had seemed to be more confused outside than they had been in the classroom, because of the streets, high-rise buildings, cars, and people. Amy's class eventually accomplished its mission and returned safely to the kindergarten.

After the field trip, Betty told me that her students understood the representation of a street on a map and its correspondence with the actual street. Before the field trip, the students thought the City Hall was close to the kindergarten because the two places seemed near one another on the map. However, during the field trip, the students learned that the City Hall was actually some distance from the kindergarten. Betty also said that her students cooperated with each other while they were finding directions and reading their maps. She believes that students develop social skills by participating in a project's group activities.

By undertaking the field trip, the students acquired an understanding of the spatial relationship between two landmarks and increased their understanding of the size of the spaces around them (Clements, 1998).

7. Making a Map

After the field trip, the students spent much time discussing their experience. They decided they wanted to make a map based on the places where they had visited. Through repeated trial and error, the students recognized that they could not make an extensive map such as a city map, so they decided to make a simple map based on the area around the kindergarten, including their destinations and several big buildings on a

main street. To make their own map, the students divided into several groups and decided upon a process. One group decided to draw a main street first and then to draw two side-streets. Each group drew the route from the kindergarten to the destination of the field trip. The students planned to collect all the groups' drawings together at the end of this project session to make one big map.

The students drew streets and buildings based on their memory of the field trip. When they did not remember a direction, they referred to the drawings they had made in the classroom after the field trip (see Figure 7). To indicate directions on their maps, some students drew a compass at each intersection and also drew the red needle so that it was pointing to the north.

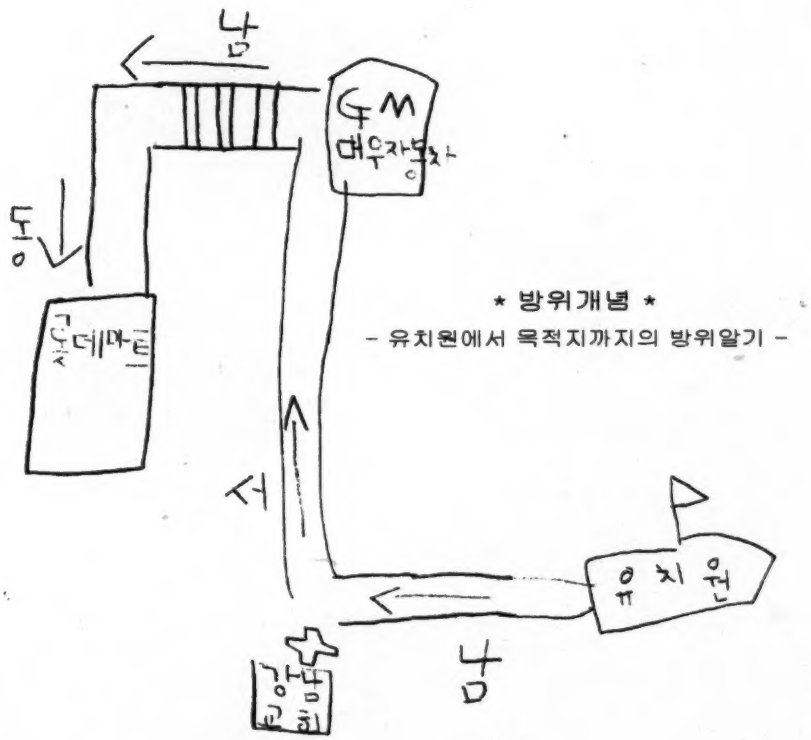

Figure 7. A Drawing after the Field Trip.

After completing their maps, the students tried to put them together. During the process of combining all the maps, the students realized that each group's map included their kindergarten. After a discussion, they decided to make another map on a big sheet of paper and to draw their kindergarten in the same place on each map. The students divided into several groups, and each group, as a team, drew another map.

The students had time to enjoy their maps and wanted to show them to other people. They decided to invite their parents to their classroom and then made invitation cards. On the final day of the map project, the students displayed all of their work in the classroom and explained what they had done in this project to their parents.

I believe that through the process of making their own maps on a large sheet of paper, the students had an opportunity to develop their social skills. While making their maps, the students discussed and negotiated with each other. Moreover, the students improved their intellectual development by interacting with their peers, adults, the environment, and a variety of materials (Katz & Chard, 2000). During conversations with Amy and Betty after completing the project session about making a map, they told me that one of their concerns for children's development in project work is development of social competence, and they expected that their students would improve their social skills through group activities such as making their own map on a large sheet of paper.

After the final project session ended, I talked to Amy and Betty. Amy told me that she felt quite exhausted. She said, "When I felt it was over, I could not remember what I had done during the whole project work. I was all in a flurry," always busy preparing and supervising the project work. She also told me that she did not always have time to review what the students had accomplished after completing each project session.

However, she was pleased to meet students' parents and discuss the children's learning. She said that she usually did not have many opportunities to meet the parents or to talk to them by telephone during a project. She explained each child's development level and her impressions of what he or she had accomplished during the map project.

During her interview at the beginning of the map project, and in conversation with me during the project, Amy explained that she had thought deeply about the project approach, especially assessment. She said, in fact, that she had excluded the important activity of assessment when using the project approach, and that before talking with me, she had wondered about how she would assess her students. However, because of my interview with her and our conversations during the project, she had tried to carefully consider the students' activities and attitudes, and then she was able to detect the kind of change in their development that she had not been able to detect previously. In addition, she mentioned that when she was assessing her students, she could change her focus from the uniform checklist of their performance and work to their conversations and problem-solving during project work.

Amy wrote more anecdotal notes during the map project than she had done during the previous project. In these notes, she tried to describe in detail the students' activities such as their conversations with each other and herself, their attitudes during group activities, and their problem-solving skills in specific situations. In Chapter 6, I provide some of her anecdotal notes. After the interview, Amy also had an opportunity to reflect upon her teaching, asking herself, "Am I assessing the children's work appropriately?" and "What is an appropriate assessment method?" She said that questions such as these made her change her attitude towards assessment and that she was now eager to assess

her students during a project. She also believed that assessing the students during a project instead of waiting until it had ended would improve her assessment of the students' performance.

On the last day of the map project, Betty was excited by the display of the work her students had completed throughout the project. She spent much time conversing with her students' parents. However, she told me that after completing a project, she always feels that something is lacking. When her students do not understand a topic, she said she has difficulty making adjustments in keeping with her understanding of the need for child-directed learning. In addition, when she reviews each project session, she believes that some of her responses did not adequately address her students' attitudes and needs, so she tries to think of appropriate responses for the next project session.

Betty told me that she uses every opportunity to explore alternate assessment methods. Her overall aim is to use child-centered assessment methods instead of the teacher-centered ones. In keeping with this notion, she also thought that using the general and uniform sentences for assessment in each field of development is not appropriate for all students.

CHAPTER 6

Analysis of Data - Anecdotal Records

Introduction

The previous chapter described the map project and Amy's and Betty's observations on project work. In my initial interviews, I learned that Amy and Betty considered anecdotal notes to be a valid means of collecting information for formal and informal assessment. In this chapter, I explore the way in which they used their anecdotal notes to assess their students' performance and work during a project. The teachers composed their notes in Korean, and I translated them into English.

Although each teacher believed anecdotal notes to be very important, the teachers differed in the manner and extent to which they used them. Amy, in fact, did not often use anecdotal notes to assess her students' performance and work during a project. In her pre-project interview, she stated that she simply tried to remember her students' activities and attitudes and then to recall them at the end of a project. However, in our conversations during the course of the project, she began to think of using anecdotal notes as an alternative assessment method for project work and to record her students' activities, attitudes, and conversations with peers during a project.

Betty had used anecdotal notes to record her students' behaviours, attitudes, and abilities during other projects. In addition, she used her anecdotal notes to compare her students' activities, attitudes, and abilities during a project with their development when she used other teaching-learning methods. In her anecdotal notes, Betty also included her comments on how to involve everyone actively in project activities and how to help her students to improve their development through project work. As well, she used her notes

to help her to communicate with students' parents, using these notes as the basis for conversations at regular parents' meetings in the kindergarten or by phone.

The purpose of the notes according to both Amy and Betty was to keep a record of the map project to use as a reference for the next project, to understand the development level of individual students, to assess their performance, and, if necessary, to review and partially revise project work in relation to individual or group needs. However, the teachers did not keep a record of all students' performances and behaviours in each project session. They explained that because they could not observe all their students' activities and take notes every day, they kept a record of two activities for each student each day, focusing on unique behaviours and problem-solving skills in a specific situation during project work.

For the purposes of my research, Amy and Betty provided me with their anecdotal notes from four project sessions for two of their students. The teachers randomly selected the notes for the students in each class. I then gained consent from the students' parents to use the teachers' anecdotal notes concerning their children. The notes recorded the students' conversations with peers, activities, interactions with the teachers, and the teachers' comments, and also included samples of project work. Amy and Betty said that their anecdotal notes for a project are focused on their students' conversations with peers and teachers. Sometimes, the teachers' colleagues help them to write down the students' conversations during a project. The teachers stated that during a project session, they try to attend to their students' attitudes and activities and to take notes related to the students' unique behaviours and conversations with peers and teachers.

The teachers' anecdotal notes for other teaching-learning methods are focused on the students' unique behaviours instead of the students' conversations. With the former type of notes, the teachers try to assess the behaviours based on the children's overall development levels. The teachers also record their personal opinions about the behaviours and write down potentially appropriate teaching methods. At the end of a term, the teachers use these anecdotal records to evaluate their students' overall development in relation to their assessment at beginning of the term.

Overall, it appears that the anecdotal notes recorded during the map project served as an important tool for understanding the students' development level, developing the next project session, communicating with parents, and collecting data for assessment.

Amy's Anecdotal Notes

A Drawing after the First Investigation outside the Kindergarten

To increase her students' interests in the topic, Amy took her students and investigated outside the kindergarten. After the first short field trip, the students had an opportunity to draw what they had seen. Amy's anecdotal notes related to this experience are as follows:

> To interest the children in the kindergarten's circumstances, I asked them to draw what they had seen during the investigation outside the kindergarten. Many children drew figures of themselves playing in the kindergarten or playground and also drew teachers and buildings. Kevin and Sarah drew buildings including the kindergarten and its surroundings.
>
> Amy: (Looking at Kevin's drawing) Kevin, did you draw the kindergarten?

Kevin: Yes, there are many windows in the kindergarten and there is another building next by the kindergarten.

Sarah: Right! I saw the building too. When I went to get in a school bus, I saw it.

Amy: I see. What else buildings did you see?

Kevin: Well, there is a grocery store…

Sarah: There is a restaurant too.

Amy: I see, then, why don't you draw what you saw such as a grocery store and a restaurant on a sheet of paper?

The children drew the buildings they saw in a row, without considering directions of right and left.

Amy: Kevin, in your drawing, do you mean the grocery store is next to the kindergarten and the restaurant is also on the same side of the grocery store?

Kevin: Yes.

Sarah: No, when you come to the kindergarten from the restaurant, you should cross a street.

Kevin: Well, I don't think so. The restaurant was on the side of the kindergarten…

Amy: Then, why don't we go out again and confirm the location of the grocery store, the restaurant, and other buildings?

I accepted the children's different opinions, and I suggested going out to determine the location of buildings. I then went out with the children.

Sarah: Look here! The grocery store is on the side of the kindergarten and there is another building on the side of the grocery store.

Kevin: I see. The restaurant is across the street.

Amy: Kevin, do you mean the restaurant is across the kindergarten?

Kevin: Yes, I do.

Sarah: Let's go over there. That way is on our school bus route.

Sarah and Kevin wanted to go straight on the right side of the kindergarten.

Kevin: Eh, what is that?

Sarah: This is a parking space. Ma'am, isn't it a church?

Kevin: Right, I saw a sign of the church. Look at that! There is a supermarket. I've been there with my mom.

Sarah: So did I.

Amy: Hey, folks! Here is a main street, so there is much traffic. We'd better go back to the kindergarten.

Sarah: Yes, ma'am.

Kevin: Ma'am, let's come again.

The children were coming back from the church.

Amy: Folks, why don't we find the direction of the church?

Sarah: (Outstretching her arms) Ma'am, the church is on my right ride.

Amy: I see. The church is on the right side. Let's go to the kindergarten.

Sarah: Ma'am, a little while ago, the church was on my right side. But now it is on my left side.

Amy: Really? Let's find out.

Sarah: My hand is pointing to the left, how about you?

Kevin: I guess so.

Amy: Why has the direction changed?

Kevin: Because a direction steering wheel (?) was changed.

Sarah: Because we turned.

Amy: Then, while going back to the kindergarten, let's find out the directions of the other buildings which we saw.

Sarah: Ma'am, on this side, there is a game room.

Kevin: Eh, here is the restaurant that I saw when going to the church.

Sarah: Is it? The restaurant was across the kindergarten…

Amy: Then, where is the grocery store that you talked about?

Sarah: The grocery store is across from the restaurant.

Kevin: Oh! Here is our kindergarten!

Sarah: Here you go.

(In the classroom)

Amy: Let's draw the street we walked on.

Kevin: Yes.

Sarah: Yes.

Kevin: Ma'am, it is hard to remember. Where was the grocery store?

Amy: Kevin, Don't worry about the exact locations of buildings you saw. Do as you please according to your memory.

Sarah: The grocery store was next to the office building.

Kevin: Is the restaurant on the right or left side?

Amy: Let's recall the way of going to the church. Which side was the restaurant on?

Kevin: This side.

Amy: Yes, the restaurant was on the left side. Then, which side was it on when coming back to the kindergarten?

Kevin: …

Sarah: The right side. The direction was changed because we turned for coming back.

Amy: Then, let's draw figures from the kindergarten. Here is the kindergarten and go straight. Then here is the church at the end of this street, right? Which side was the restaurant on?

Kevin: The left side.

Amy: Yes, let's draw the restaurant here. From now on, draw as you please.

Kevin and Sarah were drawing buildings step by step. Some locations of buildings were wrong. Kevin did not remember the locations and signs of the buildings he had seen, so he just drew a couple of buildings (see Figure 8). On the other hand, Sarah was familiar with the street, so she drew the buildings she had seen and put signs on some of the buildings. Later on, Kevin and Sarah had an opportunity to stand in front of the class with their drawings and to explain what they had drawn.

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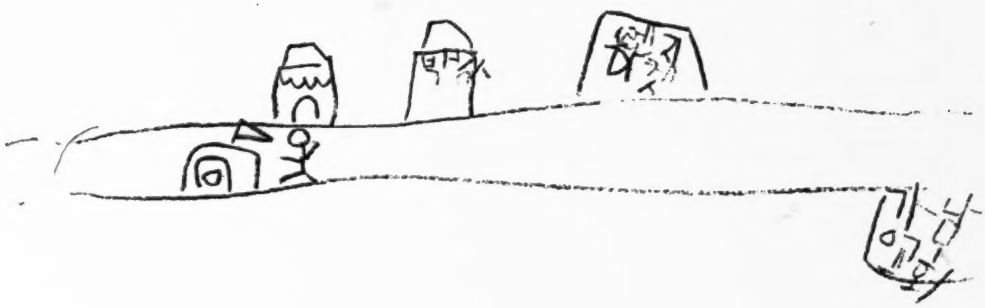

Figure 8. Kevin's Drawing after Looking Around outside the Kindergarten.

Sarah: Here is a grocery store and an office building next to the grocery store. Across the street, there is a restaurant.

Amy: Ah, was here a street?

Sarah: Here is a street and there is also a street.

Kevin: I didn't see this street.

Sarah: Yes, here is a street. I didn't remember some buildings but there is a parking space, another restaurant, and church at the end of this street.

Amy: Which side was the church on from the kindergarten?

Sarah: The right side from the kindergarten.

Amy: Then Kevin drew the church on the left side from the kindergarten.

Sarah: Ah, the church was on the left side when we came back to our kindergarten.

Amy: Kevin, do you think buildings can move like people?

Kevin: No, they can't move.

Amy: Then, why did you change the direction?

Kevin: We turned. The direction steering wheel was changed.

Sarah: Yes, we turned in front of the church.

Amy: I see. The buildings didn't move. Then, what was changed?

Kevin: We changed.

Sarah: We turned.

Amy: Right, buildings are always on the same locations. The direction of a building is changed according to a viewer's location. Wow! You guys found a great fact. After investigating the kindergarten's surroundings and drawing what you saw, did you understand everything?

Kevin: No, it's difficult to remember what I saw.

Amy: Well, how can we draw exactly what we saw and how can we make a real map at the end of this project?

Sarah: Next time, let's go out one more time.

Amy: Yes, later on, let's do it again.

The children and I were pleased as if we had found something new. To describe exactly what we had seen, we planned to go out again and conclude the project activity.

Amy's comments

The children were involved actively in this project work, the short field trip, as they had an opportunity to investigate directly the kindergarten's surroundings, which the children had imagined in the classroom. They seemed to

be pleased during the project work outside. However, it was not easy for the children to remember many things they had seen during just one walk around the surroundings. The children, thus, did not draw readily, and the locations and order of the buildings that they had seen were not accurate in their drawings.

I already knew that, depending on my location, the directions of buildings change. I wanted the children to find and understand this fact through the field trip. During the project work, they found through their conversations with me that the direction of buildings could change. However, I tried to ask many questions to induce them to understand the reason by themselves.

In these anecdotal notes, Amy described all of Kevin's and Sarah's activities in this project session, and then she provided interpretations of the students' behaviours. Through the process of taking notes during and after this project session, Amy learned about the students' knowledge and understanding of directions. During the project work, Sarah understood, for example, the directions such as right and left and also understood why the direction of the church seemed to have changed. In addition, when she described the street, she remembered the locations of buildings she had seen during the field trip. On the other hand, Kevin did not clearly understand the directions of right and left. During the field trip, he was confused about whether one building was on the right or left side from the kindergarten. Because he did not understand the directions, he had difficulty not only remembering some buildings he had seen during the field trip but also drawing their exact locations.

At the end of her anecdotal notes, Amy mentioned that she had tried to help the students to understand the directions of right and left. In this case, the process of asking

the students questions in a specific situation was a way of meeting their needs and supporting them (Strickland & Strickland, 1998). The word 'try' indicates that Amy "is a risk-taker, working with her students, talking to them, and discovering their strengths and weakness" (Strickland & Strickland, p. 33). Moreover, the reason for asking students purposeful questions is to provide them with many opportunities to think and investigate in order to solve problems by themselves. Through the process of questioning, Amy can also find her own strategies for supporting her students (Wortham, 1996).

Focusing on Children's Sense of Direction

During this session, Amy tried to learn what her students already knew about directions: right and left, north, east, south, and west, and the front, rear, up, and down. She provided her students with some activities related to developing a sense of direction.

Amy: Have you ever heard of right, left, up, and down?

Sarah: Yes, my mom told me about it.

Amy: Really? O.K., let's find out right, left, up, and down today.

Sarah: Ma'am, right is this way and left is that way.

Sarah pointed both ways with her finger in front of her peers to show them that she already knew the direction of right and left.

Amy: Sarah knew about it very well. Let's divide into small groups and learn the directions.

The children were divided into small groups, and I tried to learn what each group already knew about the directions.

Amy: Let's start with this group. Please point to the right with your finger and then point to the left.

Most children pointed to the correct direction, but a few children seemed to confuse the directions, so I instructed the children about the exact directions.

Amy: Some children knew the directions exactly, and other children seemed to be confused a little bit. Today, I will let you know the exact directions, so please remember the directions. Let's put out our hand used for eating a meal – In Korea, most people are right-handed people. Even most left-handed people use their right hand for eating a meal – up like me. We call it 'a right hand,' don't we? Then, please put another hand up. We call it 'a left hand.' People state that the side of a right hand is 'the right side' and that the other side of a left hand is 'the left side.'

Kevin: Ma'am, is this side the right side?

Amy: Yes, you're right! Let me confirm you all know about it. Please point to the right side and indicate the left side.

(After a while) Now, let's play a game. In the classroom, let's find what we have in each direction.

Kevin: Wow! It would be exciting.

Sarah: I am going to win. I know everything!

I played a game with the children to help them to practice the sense of direction while having fun.

Amy: What are on the right side from us in the classroom?

Sarah: A mirror and a bulletin board.

Kevin: A national flag, lockers, and desks.

Amy: That's right. Then what else are on the left side?

Kevin: Some scissors, picture books, and …

The children competed with each other to answer the question.

Amy: Now, let's look at the front of us. What are there?

Sarah: A whiteboard and a piano.

Amy: Then, what about behind us?

Sarah: There are windows.

Kevin: Desks, chairs, a clock, a calendar, picture books, and a broomstick. I answered more than you, didn't I? I won.

Amy: All of you have correct answers. You did a great job. Like the right, left, front, and rear, we call it, 'the direction.'

Amy's comments

At the beginning of this project session, while a few children like Sarah completely understood the directions of right and left, most children including Kevin did not understand the directions because the children are too young to have learned a sense of direction. Even though some children said that they knew the directions, they had received vague information about directions through indirect experiences. Thus, like Kevin, they were confused about directions whenever the locations of objects were changed.

During the project work, Kevin seemed to feel that something was strange when he experienced a sense of direction. After he understood directions such as right and left through experiences such as drawing his hands and the game of finding a correct direction, he seemed to completely understand at least the

directions of right and left, up and down, and front and rear. At the end of this session, I provided the children with information about the next project session. During the next session, I will discuss the directions of east, west, south, and north on a map and talk about a compass if possible.

In her notes, Amy recorded the process of how the children developed an understanding of the directions such as right and left. First, she described her assessment of the children's pre-knowledge of directions. For example, Sarah already knew about the directions of right and left. However, Kevin did not understand completely that the directions would change depending on a viewer's location. After Amy recognized Kevin's problem with directions, she provided the children, including Kevin, with two games to help them to understand the directions such as right, left, front, and rear. At the end of her notes, she described her plans for the next project session.

During this project work, Amy used her anecdotal notes as "a way of providing evidence of development" (Helm et al., 1998, p. 52). She used her notes to create a profile of the students' knowledge of directions and to plan for learning appropriately. For example, after she provided Kevin with games to develop his learning of directions, he completely understood them. In this case, Amy's anecdotal notes indicated each student's development level related to the inquiry area in the National Kindergarten Curriculum and could be used for assessment purposes. Furthermore, the notes could also be used as data for evaluating the students' development at the end of the project.

Discovering an Intersection

During the map-reading project session, the students had opportunities to explore and discuss various maps. Through this process, the students became curious about the

location of the kindergarten on a map and then tried to find the kindergarten on maps representing the area around the kindergarten. The following section presents Amy's notes for this session.

While the children were finding streets and buildings on various maps, they occasionally found the kindergarten on a map of the area around the kindergarten. From their own perspectives, the children talked about the kindergarten's location. Most of them usually use a different route to go to the kindergarten, so they persisted in having different opinions about its location.

Amy: Since you all have your own opinions about it, why don't we go out and confirm with our eyes?

Kevin: That's a good idea, Ma'am.

Sarah: Yes, I agree with you.

(Outside the kindergarten)

Sarah: Look! Here is a restaurant. What I said is correct.

Sarah explained and pointed to the buildings that she had described to Kevin in the classroom. While the children looked at a variety of store signs and free-standing signboards on the street, they went to the end of the street and then returned to the kindergarten.

Amy: Let's draw what we saw around the kindergarten.

After a while, I looked at Sarah's drawing (see Figure 9).

Figure 9. Sarah's Drawing of an Intersection.

Amy: (Looking at her drawing) Is this an apartment?

Sarah: Yes, it was in front of a restaurant.

Amy: Do you mean it was on the street that you walked down?

Sarah: No, I meant it was on the next street.

Amy: Then, is there another street?

Sarah: Yes, Ma'am.

Amy: Then, why don't you draw that street as well?

Kevin: You are wrong. There was no way.

Sarah: No, you couldn't see the street because you went straight. There was another street by the street. Ma'am, you saw it, didn't you?

Amy: Then, shall we confirm whether Sarah's opinion is right or wrong? We already went out to investigate, so I'd like to confirm by using another way. Do you have any ideas?

The children seemed not to understand what I intended, and they also seemed not to want to think about it any more.

Amy: (Unfolding a map) When we read a map, we look at it from the top. Then we can see the location of a certain building and the shape of a street at a glance. Like with this map, we might confirm the street that Sarah saw if we go up and look down…

Kevin: A high place…a rooftop!

Sarah: Right, the highest place in the kindergarten is the rooftop. Let's go up on the rooftop.

Amy: On the top of the kindergarten, there is no fence, so it is dangerous. Instead, why don't we go up the rooftop of the restaurant in front of the kindergarten?

The children and I went to the restaurant and we asked a manager of the restaurant if we could go up on its rooftop. We then went up on the rooftop of the restaurant.

Sarah: There is the street I said.

Amy: I see. I can see at a glance the street Sarah described.

Kevin: Ma'am, I found three more streets.

Amy's comments

Sarah had a relatively greater store of prior experiences of the area around the kindergarten. During the investigation of a street, while the other children like

Kevin followed me and looked down the street, Sarah discovered another street by herself, and she also found out that two streets were connected at an intersection. As she explained to Kevin what she had confirmed, she revealed that understood systematically and exactly what she had seen. Because of Sarah's discovery of a street, it was very easy to approach the concept of an intersection. However, unfortunately, I did not have an opportunity to listen to Kevin's opinion during the field trip.

At the beginning of the field trip to discover a street, the children did not consider the idea that they could look down from a high place at a street. At this point, I recognized that the children did not understand my intended approach to solve the problem. However, without any opportunity for them to find another way of solving the problem, I gave them such an answer to solve the problem because I thought that I should provide them with an understanding of an intersection. I regret having done such a thing and to have turned the session into a teacher-centered one.

In these anecdotal notes, Amy dealt with two main issues. One is her assessment of Sarah's development during the project activities, and the other is her review of her responses and interactions with her students. She briefly described Sarah's development of her inquiry activities and social skills in peer relationships. For the assessment and evaluation of all of Sarah's areas of development, the notes could be used as data to create a profile of her knowledge, attitudes, skills, and behaviours, in order to emphasize "strengths, progress, and sources of concern" (Helm et al., 1998, p. 52) during the project activities.

Amy's second concern in her notes was with how to adapt project work to meet the needs of her students. She thought that she had not provided all her students with an equal opportunity to present their opinions. She also thought that she had directly given her students a solution to solve a problem instead of helping them to solve it by themselves. Through the process of recording her anecdotal notes, Amy had an opportunity to rethink how she had worked with her students and to find another teaching-learning practice based on child-centered project work. For the following project session or even for the next project, such anecdotal notes could help Amy to become a "reflective decision maker" and to "make later evaluation more concrete because specific incidents are recorded for reflection and analysis" (Strickland & Strickland, 1998, p. 34).

Selecting a Destination for the Field Trip by Using a Map

As the students were able to read a map and understand the concept of directions, Amy planned to visit a specific place to provide them with a direct experience related to the topic. During the teachers' meetings prior to this project session, Amy had already selected a destination that was suitable for her students to visit. Now, she considered how to let the student think they were choosing this place as their destination.

> During the process of drawing a map for the area around the kindergarten, the children drew buildings and streets for a two-block area including the kindergarten. Then the children realized that their hand-drawn maps were different from a real map of the area around the kindergarten.
>
> Kevin: My drawn map is different from the real map.
>
> Sarah: The real map is complicated, but mine is too simple.
>
> Kevin: Because we drew a few buildings and streets.

Amy: Kevin, you mean that there are few buildings and streets in your drawing map because we went out and just looked the area around the kindergarten?

Kevin: Yes, we have been to the church at the end of the street. If we go further away, I can draw a map like a real one.

Sarah: Then, if we go to Seoul, our map would be very complicated.

Kevin: But, we can't go to Seoul.

Amy: Why do you think that?

Kevin: Seoul is so far from here.

Sarah: We can go by car.

Kevin: If so, we couldn't know in detail.

Amy: Do you mean that if we take a car, we can't see buildings and streets in detail?

Kevin: Yes.

Amy: Then, what can we do to see buildings and streets in detail?

Sarah: Go on foot.

Kevin: Right, if we go on foot, we can repeatedly go and stop to see something in detail.

Amy: Then, hadn't we better go a place which is available by walking if we want to draw a map? Which place is good for us?

Sarah: The hospital in front of our kindergarten!

Kevin: We've already been there.

Amy: Do you want to go a new place?

Kevin: Yes.

Sarah: I'd like to go the hospital.

Amy: The hospital would be a good place for our field trip, but I think the hospital is too close to draw the kind of complicated map that you want.

Kevin: Right, the hospital is very close to our kindergarten.

For some time, the children considered where to go, and then they continued their discussion while looking at the map of the area around the kindergarten.

Sarah: (Looking at the map) Here is our kindergarten. Then, let's go this place (pointing to a department store).

Amy: Sarah wants to go to the department store but I think the place is too far to go there on foot.

Sarah: Then, let's go here (pointing to a superstore). This place is closer than the department store from our kindergarten.

Kevin: The superstore! I've seen it on my way to go to school. I think I can go there on foot.

Amy's comments

The children understood that their drawn map was different from a real map, and that their map was simple and incorrect compared to a real one. They concluded that their map was incorrect because they had gone only to places near the kindergarten. In addition, the children spontaneously decided to draw an extended map. As they said that they would not see the exact locations of buildings if they took a car, I believe that during their project activities, the

children had gained some knowledge about distances and learned the concept of direction.

While looking at the map of the area around the kindergarten, in the process of selecting a destination for their field trip, the children accidentally pointed to the superstore as their destination. Before starting this project session, I already had planned to go to the superstore for the trip, so I wondered how to induce the children to select the superstore. However, fortunately, the children naturally chose the place for the field trip.

Amy also mentioned selecting a destination for the field trip. Through her conversations with her students, she tried to induce them to choose the superstore as their destination. Instead of being teacher-centered and selecting a place by herself, she tried to focus on child-directed activities. According to Helm et al. (1998), project work provides an excellent environment for assessing children's development because a project is largely "child-directed and teacher-guided" (p. 55).

In Amy's anecdotal notes for this project session, she did not assess the students' behaviours or attitudes. In other words, she assessed all of Kevin's and Sarah's project work as a whole. She recorded one episode from the 'Finding a specific place by using a map' session, focusing on the students' conversations to solve a problem. By studying these conversations, Amy assessed the students' knowledge of distance. As well, her notes might be useful at the end of this project when Amy assesses the students' development in the inquiry component of the National Curriculum. These notes may also be used to compose a checklist for the map project.

Betty's Anecdotal Notes

A Draft of the Drawing after the First Investigation outside the Kindergarten

Before taking her students outside the kindergarten, Betty spent a long time talking with them about the surrounding area. The students were excited about going outside, and they talked to each other about what they were going to do during the field trip. Betty also provided an opportunity for the students to talk about precautions to prevent an accident in a public place or on a street. During the field trip, the students were interested in buildings and streets which they had never seen before. After the field trip, Betty provided the students with an opportunity to review what they had seen and done during the field trip. Betty's notes are as follows:

I prepared materials for the children to feel free to draw what they wanted to after looking around outside the kindergarten.

Chris: (Looking at me doing something) Ma'am, are we going to do a painting?

Jacob: I guess so. What am I going to draw…? I'd like to draw a car.

Chris: Today we went out of the kindergarten, so I want to draw what I saw in the outside of the kindergarten.

Betty: Right, we are going to do art activities. Jacob, do you want to draw a car? And Chris, do you want to draw what you saw in the field trip?

Chris: Yes, I'd like to draw a way of coming to our kindergarten.

Betty: Do you remember the area that we looked around?

Chris: Yes, I do. I remember the restaurant.

Jacob: I saw some cars.

Betty: Then, let's draw what we'd like to.

While looking at materials for drawing, the children started to draw freely. Chris made a particularly detailed drawing (see Figure 10).

Figure 10. Chris's Drawing after Looking Around outside the Kindergarten.

Chris: (Pointing to his drawing) This is the superstore.

Jacob: I drew a car parked in a street.

Betty: Jacob, do you remember the car?

Jacob: There were many cars in the street.

Betty: Do you remember something else?

Jacob: There was a restaurant.

Betty: (Looking at Jacob's drawing) I couldn't find the restaurant in your drawing.

Jacob: Then, I will put the restaurant in here.

Chris: There was an apartment, too.

The children freely drew whatever they remembered from their field trip. Their drawings looked good, but the locations and directions of buildings were different in each drawing. Then I asked the children some questions.

Betty: Good drawings! Both of you did very well. In your drawings of the area around the kindergarten, can I find the buildings that I remember from the trip? If so, I am going to find the church.

Chris: (Pointing to his drawing) Here it is.

Jacob: Eh? I didn't have it in my drawing.

Chris: (Looking at Jacob's drawing) You drew many cars and put the superstore in a different place from my drawing. Your drawing is very different from mine.

Jacob: Then, I am going to draw again. I can draw better than you did.

Betty: Can you draw better than your last one if you draw again?

Jacob: …

I gave a big hug to Jacob and praised him for his drawing.

Chris: Ma'am, I want to go out again. I think I can remember what I saw better if I go out and look around again.

Betty's comments

Before going out for the field trip, I expected that after it, the children would be able to draw the area around the kindergarten very well. However, Chris and Jacob drew a few buildings on a street, and the directions, locations, and spaces between the buildings were much different from the originals. Chris generally did a great job. He drew what he remembered from the field trip, but the locations of the buildings were not correct. He seemed to remember the array of the buildings. On the other hand, Jacob generally seemed to not remember what he had seen on the street.

Chris and Jacob had an opportunity to discuss their drawings with other children who had been on the field trip, and the children compared their drawings with others. Some of them were disappointed by their drawings. As I gave them another chance to draw, I believe that I encouraged them to investigate the surroundings of the kindergarten and to draw again. Thus, the children and I decided to go out again and then draw after our investigation.

Through the process of recording the students' conversations with one another as well as with her, Betty had an opportunity to determine the students' development level and their problem-solving abilities. For example, Betty expected that after the students went on their field trip, they would be able to accurately describe the area around the kindergarten. However, she realized that the students did not understand directions and the concepts of location and space. In her notes, Betty also recorded the results of the students' drawing activity. For example, as Betty compared Chris's drawing with Jacob's, she concluded that Chris remembered more of what he had seen during the trip than

Jacob. As Betty uses her anecdotal notes to assess her students' work, knowledge, and development, she determines each student's development level and helps the student to improve his or her knowledge and skills.

According to Helm et al. (1998), recording students' activities and work enables a teacher to focus inward on her own skills and knowledge and also to improve as a professional. Betty recorded not only her observations of the students' attitudes and interactions with each other, but also her reflections. For instance, Jacob was disappointed when he compared his drawing with those of the other students. At that time, as Betty gave him another chance to draw what he had seen during the field trip, she encouraged him to want to be involved spontaneously in project work. Anecdotal records enable a teacher to reflect on his or her experience during project work.

Focusing on Children's Sense of Direction

After the field trip, to maintain the students' interest in the topic, Betty displayed their drawings on a wall in the classroom. As soon as the students came into the classroom in the morning, they saw their drawings on the wall, and each child tried to find his or her own drawing. They then talked about the drawings with each other.

Chris: Look here! Here are our drawings. Our drawings are a little bit different from each other.

Jacob: Yes, they are. How come?

Chris: In my drawing, this restaurant is here, but it is on next by our kindergarten in your drawing (Chris pointed to Jacob's drawing). The grocery store should be on the next by the kindergarten instead of the restaurant.

Betty: Like you children said, your drawings are really different.

Jacob: Why are they different? We went out together last time.

While looking at their drawings after investigating outside the kindergarten, the children realized that the locations of buildings that they had drawn were different from those of the originals. Some of buildings were in opposite places. I believe that children at this age do not completely develop a sense of direction, so I planned teaching-learning methods for the children to experience a basic sense of direction so that this project could achieve its goals.

During school hours, I played a song related to 'right and left hands,' and I also did a rhythmic movement along with the song. As I raised my right and left hands in time with the music, the children followed my movements. For those children who did not recognize the directions of right and left, I indicated that the left is on the side of the heart and that the other side is the right. In addition, I put a sticker on the back of the children's right hands, and I told them that the right hand is used for eating something with a spoon or chopsticks, writing, or cutting something with a pair of scissors. For left-handed children, I explained the left hand's use similarly.

Through activities in the classroom, while the children played the game 'find objects on the right and left side,' they learned the basic concept of direction. They seemed to think that this game is a simple game. In the playground, moreover, some children got together and played the game to find something on the right and left side.

Chris: Please move to the play equipment on the right side of you.

Jacob: I reached a swing.

Chris: It's your turn, Jacob.

Jacob: I want to start from there. (He ran to a place where he wanted to be.) Please go to the play equipment on the right side of you.

Chris: I arrived at a slide.

Jacob: Then, go to the equipment on the left side.

Chris: I am in a swing. Eh? It's strange.

Last time, when I told you to go the equipment on the right side of you, you arrived at the swing. Now, I moved to the left side and then I also arrived at the swing.

Jacob: Ma'am, the right and left are switched.

Betty: Are the right and left sides switched? How did you realize it?

Chris: Last time there was the swing when Jacob went to the right side. Now there is also the swing when I go to the left side.

Betty: The swing did not move. It stays at one spot. Then, why are the right and left switched?

Chris: Certainly, the swing was on the side of my hand which has a sticker on the back. (While running to the swing, he emphasized that he is correct.)

Jacob: Ma'am, please listen to me.

I definitely went to the right side and there was the slide. (Jacob also emphasized that this way is the right side. He ran to the slide and waved his hand)

Chris: Why are there two right sides?

I recognized that Chris and Jacob had stood opposite to each other when they played the game. Thus, I understood the situation and asked them a question.

Betty: Chris, where did you stand at the beginning of the game? Please stand on the spot like you did the first time. Jacob, please also stand on the spot on which you stood at the beginning of the game.

Chris and Jacob listened to me and then stood on their spots.

Betty: (Chris and Jacob standing face to face) Could you put your right hand up please?

Chris and Jacob expected that they would put up the hand on the same side of their bodies, as if each of them were the other's reflection. However, the children were surprised when they put up hands on opposite sides of their bodies.

Chris: Because we were on the opposite side, the direction of right was different between us.

Betty: Then, could you tell me what is on the right side as well as what is on the left from if you folks are standing together on the same spot?

I had Chris and Jacob play on the same side as well as on the opposite side. Finally, they understood that the side of play equipment changes depending on their location.

Betty's comments

Before working in this session with the children, I was worried how those who did not clearly understand which side is "right hand" or "left hand," would understand the concept of directions. However, through the play related to directions, the children easily learned the directions of right and left. In addition, I provided an opportunity for them to understand that these directions can change according to a viewer's location.

I tried to intervene at the proper time in the children's project activities. When they had a problem related to the topic, I supported them while they tried to solve the problem, and I developed project work that reflected their interests. However, sometimes, I did not wait for them to complete their problem-solving on their own, and I guided them towards my own solutions.

Children explore their interests through play itself. Sometimes, like Chris and Jacob, children ask themselves a question through play. I think that questioning themselves spontaneously helps them to develop their ideas and to solve a problem. Even though Chris and Jacob do not fully understand the concept of direction and location, I believe that they understand the concepts of "right" and "left." If this is the case, I expect that during the next project session, it would be useful to help them to understand the directions of north, south, east, and west on a map.

To help her students' understand the concept of directions, Betty decided to provide some appropriate games. According to her anecdotal notes, she tried to be directly involved as little as possible in her students' problem-solving activities. Betty's

style of teaching could be described as "a process of continuous decision making" (Helm et al., 1998, p. 131) for improving students' growth and development. To make a good decision, a teacher needs "the accuracy, relevance, and reliability of the evidence" (Helm et al., p. 131) that he or she gathers through students' project activities and work. Documenting students' activities and products by making an anecdotal record is one of the methods that can help a teacher to make decisions that will benefit the students' learning experience. When Betty writes anecdotal notes to describe the process of the students' development of the concept of directions, she provides an opportunity for herself not only to examine the students' development by using her notes as evidence, but also to prepare activities that she believes will be appropriate for their development level.

In her anecdotal notes, Betty also described the students' activity of 'asking themselves.' Because she understands the project approach as a child-centered teaching-learning method, she emphasized that this activity helps the students to improve their problem-solving skills spontaneously. According to Helm et al. (1998), a teacher's anecdotal notes "capture skills and knowledge that were demonstrated in the classroom" (p. 133). In this case, this documentation provided an insight into how Chris and Jacob solved the problem related to their understanding of directions.

Discovering an Intersection

During the project session about map-reading, the students became very interested in finding a street they already knew. They were also interested in a variety of symbols such as legends, the different lengths of streets, and the different shapes of the compass roses on the maps.

In the classroom, the children who were interested in maps enjoyed finding a street and following it on a map. However, when they physically investigated a street, the children could not easily find one of the intersections shown on their map. Wondering why they could not find an intersection in the area around their kindergarten, the children returned to their classroom.

Betty: During the field trip, did any of you find the intersection that you had seen on a map?

Chris: I went out to find it, but I couldn't.

Jacob: The street was very broad. It was not like an intersection.

Betty: Many wide streets were on the map we looked at…

Chris: How did someone put all of streets on the map?

Jacob: It is difficult to find streets and put them on a map.

Betty: Yes, I agree with you. How did people do that?

Chris: There are so many streets.

The children went out several times to investigate a street, but they had difficulty later drawing a street. Thus, they were wondering how many streets could be drawn on a map.

Betty: The spot that we located is the intersection that we saw on the map.

Chris: Then, why does it not look like an intersection?

Jacob: How do people draw it if it does not look like an intersection?

Betty: Then, why don't we find out how to draw a map?

Chris: Yes, Ma'am.

Jacob: That sounds good!

As the children looked at books related to maps and learned about them by using the Internet, they found out that one way of drawing a map is to go to a high place first.

Betty: Where can we go to look down at a street?

Chris: Let's go to a high place.

Jacob: Then, can we look at an intersection carefully?

Chris: It would be good if we go to a high place.

The children went up on the rooftop of the kindergarten, but they could not look down well because the roof obstructed their view. In some buildings, the people there would not allow us to go up on the rooftop. Finally, the owner of a restaurant allowed us to go up on its rooftop.

Betty: Are you looking at the streets carefully? Can you find an intersection?

Chris: Yes, I can see a street at a great distance.

Jacob: Now I can see an intersection. (He pointed to the intersection.) From here to there I can see the connection between two streets.

Betty's comments

At the beginning of this session, I focused on allowing the children to find an intersection by themselves. However, their interest in maps developed into an interest in map-making, so I thought that they needed to learn about it. Thus, the children and I tried to find materials in books and on the Internet and learned how to make a map. From their research, the children learned that people should go up to a higher place if they want to make a map of an area. In our project, as the

children went up on the rooftop of a restaurant, they experienced how to get the information needed to draw a map and discovered an intersection through their own efforts.

It was difficult for me to induce the children to solve the problem by themselves. For example, when the children were on the street and looking for an intersection, they had difficulty finding one. At that time, I said, "Have you folks gone up a high mountain?" to induce the children to suggest that we go to a high place to see an intersection. I believe that I should try to ask the children questions to extend their interests and ideas related to a project's topic.

Chris did well in response to my suggestions and instructions in the project activities. He seemed to think deeply in order to answer my questions. On the other hand, Jacob's responses were passive, and he participated in the project activities as if he was being influenced by Chris's active responses. Through the children's activities, I could understand the importance of influence and stimulus for children of Chris and Jacob's age.

Betty's description of the extended project work shows that a teacher's plan for project activities can be modified by students' interests related to the topic. Her notes also show that she reflects on the students' opinions during a project. In the anecdotal notes, the documentation of flexible project schedules depending on students' demands is evidence of child-centered project work. Furthermore, as Betty reflected on her role as a teacher in relation to the students' problem solving, she had an opportunity to think of how she could help her students to develop their ideas and problem-solving skills during project work. Through a teacher's observations of students in actual problem-solving

situations, the teacher can evaluate the students' progress by assessing their knowledge and problem-solving skills (Gullo, 1994).

According to Betty's comments, Chris, and Jacob's engagement with project work differed. However, as Jacob seemed under the influence of Chris's activities during the project work, he had active relationships with his peers as well as the teacher. As in the case of the relationship between Chris and Jacob, students' interactions with their peers give a teacher an opportunity to assess and evaluate the students' abilities to relate to other students. Through such group activities in project work including cooperation and role play, a teacher can assess particular aspects of a child's social development (Gullo, 1994). A teacher who reflects on anecdotal notes as a documentation of each child's activities has the possibility to improve his or her teaching as the results or lack of results of his or her current teaching method become visible (Helm et al., 1998).

Selecting a Destination for the Field Trip by Using a Map

Through the whole of the project work, the students improved their map-reading skills, spatial understanding, the practical ability to find an intersection, and so on. In this project session, with these kinds of learning experiences, the students wanted to engage in actual situations such as going out and finding a specific place by using a map by on their own. Thus, to satisfy their desire, Betty planned a field trip.

> The children had many opportunities in the classroom to find specific places on a map. They liked to investigate maps and actually wanted to find a specific place by themselves.
>
> Chris: (Looking at a map) I'd like to go to the USA.
>
> Jacob: It is so far from our country. I'd like to visit a close place.

Betty: Chris, do you want to go a far place?

Chris: Yes, instead of imagination travel within a map, I really want to travel in a real place.

Jacob: Then, how can we travel by ourselves? We don't have a car and money…

Chris: We can go on foot.

Jacob: Last time, when we walked to the church, it was difficult because of many cars in the street.

Chris: We can go to a place where a few cars are.

Jacob: We should start from our kindergarten, so which place is good for us?

Betty: Please ask me if you need any help to decide on a place to visit.

Chris: Let's find a place while looking at a map.

The children examined several maps to find a place for the field trip, but they had difficulty selecting a place just by looking at them. Because the children had many maps, too many choices were available. Chris still persisted in wanting to go to a far place, and the children could not agree on a destination.

Betty: Here are a variety of maps. Did you find an appropriate place for visiting?

Chris: No, it's hard.

Jacob: There are so many maps.

Chris: It's complicated.

Betty: Then, what do we do?

Is there a good idea?

Is it difficult to look because we have so many maps?

Chris: Yes.

Betty: Then, don't look at all the maps.

Why don't we examine a map that includes our kindergarten?

Jacob: Yes, I like that kind of map.

Betty: All right, like Jacob said, I think a map that indicates the area around the kindergarten is good for us.

Chris: (Looking at the map of the area around the kindergarten) The church that we visited last time is here.

For this trip, let's go another way. Here are a department store and a broadcasting station.

Jacob: Here is a sports stadium.

Chris: I've been to all of these places with my family. We have to take a bus or taxi to go there.

Jacob: On the map, these places are so close.

Chris: Of course, the map is a drawing that people made small.

Jacob: Then, we should find a closer place than those.

Chris: Right, we have to find a place very close to our kindergarten.

Betty: That's a good idea!

Chris: Here are a bank, the City Hall, an ordinary market, and so on.

Jacob: Among these places, let's select one place for the trip.

Chris: I know every place except the City Hall. What is the City Hall for?

Betty: The City Hall is an important government office to manage our entire city including buildings, traffic, environments, etc. and to protect citizens' lives and property.

I've been there.

Chris: I'd like to visit the City Hall.

The children found two places to visit and then finally decided to visit the City Hall. After visiting the City Hall, the children had an opportunity to look back on their field trip and to draw their route to the City Hall (see Figure 11).

Figure 11. Chris's Drawing of a Route to the City Hall.

Betty's comments

In this project activity, I tried to support them not only to select a place by themselves for a field trip but also to plan for the trip. For example, in the children's discussions about the field trip, I helped them to keep their plan focused on the purpose of the trip. In the process of developing the map project, the children learned through their own experiences that distance on a map is different from distance in real life.

In her anecdotal notes, Betty reflected on the students' preparation for the final field trip. She did not make detailed notes for assessing each child's behaviours during this project session, but she did record the process by which the students developed their understanding of 'distance.' For example, Betty was involved in the students' conversation about the difference between distance on a map and real distance. Through her observations of her students during their project work and her interactions with them, she can assess the students' understanding of specific information. Betty used her anecdotal notes to reflect on how she could improve her teaching practice, and used anecdotal notes about individual students to improve the quality of their teaching (Helm et al., 1998).

CHAPTER 7

Discussion of the Findings and Implications for Further Research and Practice

Introduction

The purpose of the study was to investigate the actual assessment methods used by teachers undertaking the project approach with students in kindergartens in Korea. This study had two phases. In the first phase, I sought to explain assessment within the project approach in general. For this phase of the study, the theoretical basis for assessment and practical forms of assessment were provided in Chapter 2. In the second phase, I explored how two teachers using the project approach assessed students' performance in order to enhance their overall development. The assessment practices of two teachers in a private kindergarten in Korea were examined through interviews (see Chapter 4), observations (see Chapter 5), and analysis of their anecdotal records (see Chapter 6).

This chapter has three sections: (1) findings and limitations of the study, (2) discussion of the findings in terms of the two participants' experience of assessment when using the project approach, and (3) the implications for further research and the use of the project approach in Korea and in general.

Findings and Limitations of the Study

Findings

The case studies were carried out to attempt to answer two underlying research questions. An analysis of the data including that obtained from interviews (see Chapter 4), observations (see Chapter 5), and anecdotal records (see Chapter 6) provided findings related to the research questions.

What forms of assessment are used with young children in the project approach in the Republic of Korea and elsewhere?

The results of the study indicate that the two kindergarten teachers in Korea used various forms of assessment when using the project approach. Both used their students' products such as writings, drawings, and constructions as materials to assess the students' abilities and determine their status as well as the progress of their overall development. In addition, the teachers used anecdotal records as performance-assessment tools to assess the students' learning activities during project work.

Amy, who had one and a half year's experience with the project approach, used more worksheets as an assessment method for improving her students' understanding of new knowledge related to a project's topic. She also used the students' self-evaluations presented either orally or in a written form to assess factors such as their literacy, ability to express themselves by speaking and drawing, and basic attitudes.

On the other hand, Betty, who had five years' experience with project work, used a checklist she had made herself to assess her students' project work. Through teachers' meetings held before the beginning of the project, she designed her project so that it satisfied the National Kindergarten Curriculum's requirements for developing basic knowledge and skills for each development level and subject area. In the process of project work, she kept her plan in mind and assessed the students' learning activities and project products at the end of the project.

How is information resulting from assessment used to evaluate students' performance in light of the official kindergarten curriculum in the Republic of Korea?

During the interviews, the teachers expressed different opinions about the relationship between assessment and the official kindergarten curriculum. During a project, Amy was not concerned with the interrelation between the students' project performance and the contents of all subject areas in the National Kindergarten Curriculum. To assess her students' performance and work, she focused on their project activities without being concerned with a specific subject area in the curriculum.

On the other hand, Betty's prepared materials for the project, such as checklists and the contents of her students' expected activities, indicate her belief that the project approach is related, as a teaching-learning method, to the National Kindergarten Curriculum. For the map project, before starting the project work, she made standards for assessing it based on her expectations of her students' performance and work. After her students completed the project, she evaluated their activities by applying the standards for the contents of all subject areas in the curriculum.

Limitations of the Study

According to Merriam (1998), even though the case-study approach is the best design for answering research questions in educational fields, its use has limitations. The product of a case study may be "too lengthy, too detailed, or too involved" (Merriam, p. 42) for a researcher to collect and analyze data. Merriam also states that "the amount of description, analysis, or summary materials" (p. 42) can be oversimplified or overstated by a researcher. Depending on "the sensitivity and integrity" (p. 42) of a researcher as a

primary investigator, the case study can be limited during data collection and analysis. Merriam states, thus, that the researcher and the readers of the case study need to "be aware of biases that can affect the final product" (p. 42) of the research.

This study focused on two participating teachers in one private kindergarten in an urban area in Korea. Thus, the conclusions drawn from the findings in this study may apply only to teachers who work in similar circumstances. Experiences unrelated to the project approach were not considered in this study. Moreover, the findings in this study were influenced by the perceptions and experiences of the researcher. Nonetheless, I believe that my research resulted in a rich description of the two cases and significant insights into assessment practices in an area of study that, although of critical importance, has until now received little attention.

Discussion of the Findings

This section presents my reflections on assessment in the project approach, based on the findings from the case studies. My reflections are based on my interviews with the teachers, my observations of them during the project, and my appraisals of their anecdotal records as assessment materials. My analysis of the findings identified seven issues related to assessment in the project approach: forms of assessment depending on the teacher's experiences with the project approach, alternative assessment methods, teacher-training programs, the teacher's practical use of after-school hours, the teacher's relationships with students' parents, the relationship between the project approach and the official curriculum, and the Korean version of the project approach.

Forms of Assessment Depending on the Teacher's Experiences with the Project Approach

For assessing project work, the teachers used different methods that related in a general way to the teachers' degree of experience with the project approach. Amy, who had one and a half year's experience with the project approach, had a tendency to assess the students' performance and work in each project session separately from the whole. In other words, when she assessed her students, she focused on only a certain situation in the project work instead of on the project's context. As a result, her assessments were based on the concrete results of each project session. During a project, she also considered what assessment procedures would be appropriate in order to assess the students' project activities. She said at the end of the map project that she always tried to bear assessment in mind during project work but that assessment was difficult to carry out. Therefore, she usually assessed her students' performance and work after completing each project session or at the end of a project. The results of these assessment practices indicate that she assessed each project activity separately and concretely and that she had considered what method of assessment she would use with the project approach. In addition, as a way to easily assess the students' status during the map project, she used worksheets related to its theme. With the results of the worksheets, she could recognize the individual students' development level by focusing on their understanding of the project work.

Betty, who had five years' experience with project work, tended to assess her students by considering all aspects of their development. Before starting project work, she gathered information on her individual students and focused on their overall development by studying her records for their previous projects and having conversations

with their parents. During project work, she tried to remember the students' unexpected and unusual ideas and activities and to keep a record of them in her anecdotal notes. In other words, she tried to assess every aspect of the individual students' experience. At the end of a project, she collected all materials such as the students' writings and drawings, her comments on her assessment of their project activities, and information on them from their parents, and evaluated the students' development as a whole. In addition, to assess their project work, she did not focus on only a specific product or project session. Instead, she tried to understand the relationship between the present project and a previous project, other teaching-learning methods, and the National Kindergarten Curriculum. In order to assess her students' project work, she also made a checklist based on the development of all subject areas in the curriculum. As well, she had an ongoing relationship with the students' parents. Through conversations with them, she shared her understanding of individual students' development and school life.

Betty explained that according to her students' interests in a particular topic, she can, within the framework of her plans for a project, change the project work in response to the students' demands. To meet these demands, she also prepares more information and materials related to whatever her students are interested in. As shown in Table 6, the teachers' different experiences with the project approach correlate with their different assessment strategies and practices for project work.

Table 6

Amy's and Betty's Assessment Strategies and Characteristics of Assessment for Project Work

	Strategies of assessment	Characteristics
Amy	Segmented Cautious	Concrete
Betty	Holistic Ongoing	Takes risks Fluid within limits

Alternative Assessment Methods

Currently, early childhood educators in Korea tend to exclude uniform assessment methods such as standardized tests because they believe that formative assessment methods are not helpful for determining students' progress toward achieving many educational outcomes and that these methods are incompatible with recent instructional strategies (Kim, 2000; McAfee & Leong, 2002). Instead, these educators advise teachers to apply informal assessment methods such as observation, checklists, anecdotal records and portfolio assessment. In the kindergarten classroom, performance assessment as an alternative method of assessment was introduced in the middle of the 1990s, and it has remained a useful method for understanding students' learning status and progress (Bae, 1999; Lee & Kim, 1999). The teachers who participated in this study also used performance-assessment methods such as direct observation, project work assessment, and the use of anecdotal records for the map project.

Even though the teachers were expected to use various performance-assessment methods in their classrooms, my interviews and conversations with them indicated that

they did not understand what "performance assessment" was. However, they explained that they had heard that performance assessment is useful for determining students' learning progress and developing their learning abilities in early childhood education. In particular, they believed that for the project approach, performance assessment is useful for teachers as well as students because this approach is a child-centered program based on students' activities related to a project's topic. However, due to a lack of information, the teachers did not know how to use performance assessment during a project.

During the map project, the teachers observed and recorded what their students had done in each session, and, in the process, assessed their students' performance. However, the teachers did not realize that their assessment practices such as using observations and anecdotal records were actually "performance-assessment methods." For instance, in their conversations with me, the teachers explained that they thought their comments in their anecdotal records on individual students' project performance and work were just documents for evaluating the students at the end of the map project and for keeping in individual students' portfolio folders. The teachers thought that a standardized test such as a school readiness test or a G & T program test is officially an "assessment method." Through these tests, the teachers could see the precise results indicated with numbers. Moreover, the teachers believed that the results on an officially recognized assessment are "evidence" to provide to students' parents and administrators. On the other hand, the teachers thought that students' parents and administrators do not perceive observations and records of students' project performance and work as "assessment procedures." To meet the parents and administrators' demands for

assessment, the teachers preferred to use an official assessment method instead of an alternative one.

The teachers, nonetheless, questioned the benefits of using a formative assessment method such as a standardized test. The teachers believed that they lacked the kind of performance-assessment materials they needed. They had not received anything about performance assessment from the Ministry of Education and Human Resources Development. In order to use performance assessment as a developmentally appropriate assessment practice in the classroom, teachers need to have materials and information about and guidelines for performance assessment. To use performance-assessment methods systematically, teachers need specific guidelines provided by experts on performance assessment in the field of early childhood education. Teacher-training programs or workshops are necessary to give teachers opportunities to learn about performance-assessment practices. Moreover, administrators and students' parents need to attend workshops or seminars to acquire an understanding of performance assessment as a systematic assessment method.

Teacher-Training Programs

In Korea, in-service teacher-training programs in the field of early childhood education are usually provided for kindergarten teachers during summer and winter vacations. The findings of this study indicate that the teachers usually have an opportunity to attend these programs once a year and that they then obtain new information on a variety of teaching-learning methods. In addition, various workshops related to early childhood education are held at irregular intervals during the year, so kindergarten teachers can learn about new instructional strategies.

The teachers in this study believed that the content of teacher-training programs is sometimes not related to the current issues in early childhood education. For example, when the teachers wanted to know about performance assessment, no related sessions in the teacher-training programs were being offered. Occasionally, a session on assessment is offered, but the overall content never changes. In order to provide kindergarten teachers with new information about early childhood education, the organizers of the teacher-training programs need to find out what teachers themselves want to learn through the programs and invite appropriate speakers such as professors in the field of early childhood education, experts on parents' education, and administrators working on the organization of school work. For instance, in a workshop regarding appropriate assessment methods for children, the speakers or instructors could provide the participants with information on various assessment methods and to explain in detail how each assessment method might work in the classroom. The speakers could help the participants to develop their own assessment strategies for specific teaching-learning methods.

To help teachers to understand the significance of children's drawings in the project approach, the organizers of the teacher-training programs could provide teachers with knowledge concerning children's drawings. Throughout project work, children have many opportunities to represent their ideas about a topic with drawings. Teachers with knowledge of and information about children's drawings can better understand children's meanings in relation to this form of representation.

A further issue related to training is the lack of promotion of available workshops. When foreign or local experts present workshops on topics related to early childhood

education, they are not always well advertised and kindergarten teachers may miss them. In addition, workshops are usually held in large cities, so teachers who work in small towns cannot easily attend. To provide the best opportunity for all teachers to attend a workshop, its organizers need to announce it well in advance and to announce it all teachers in Korea.

The Teacher's Efficient Use of After-School Hours

Amy said that during a project, she did not have enough time to review what her students have done and to prepare activities that can be assessed in the following session. She also has a great deal of routine work to do after school. Most kindergartens in Korea usually provide all-day programs for children. After school, kindergarten teachers have to clean their classroom, compose a daily plan for the next day, prepare materials for its lessons, decorate the classroom with pictures or constructions related to the current theme, write official letters to students' parents, and prepare reports for the school's administrators. The teachers usually do not complete their formal tasks until late evening.

In order to have enough time to plan how they can enhance students' overall development, kindergarten teachers need to have more "free" time after school. Instead of having to do official work unrelated to students' learning and development, the teachers need to be able to focus on work that will support individual students in relation to their development. To give the teachers more time after school, administrators and principals of kindergartens need to simplify the teachers' office work such as the writing of reports. The teachers also need to effectively manage their after-school time and use it in ways that will directly benefit their students as well as leave themselves time for rest and personal development.

The Teacher's Relationships with Students' Parents

Betty said that she tried to maintain close relationships with her students' parents. In particular, during project work, she has many opportunities to talk to parents about their children's development. As Betty mentioned, teachers who have information from parents about their children's different abilities and backgrounds can easily determine children's stages of development. I believe that the parents also want to have supportive relationships with teachers. Most parents want to know what their child is doing in kindergarten (Yoon & Park, 2000). A teacher can make a point of remembering or recording what a student did, and of sharing this information with the student's parents.

To have a positive partnership between teachers and students' parents, both parties need to share information about students' development and ideas concerning teaching and learning. Students' abilities and attitudes may differ at home and in the classroom, so parents need to have opportunities to be involved in school activities. This involvement can be achieved by parents talking with teachers or becoming involved in project work, for example, by attending a student play or observing displays of students' project work.

In Korea, teachers are the most important link in home-school collaboration efforts. The teachers need to not only provide parents with information regarding their children's progress in school but also to assume the leadership role in reaching out to involve the parents in the life of the school. In addition, parents need to be given opportunities to become involved in making decisions about their child's education and to be encouraged to visit and participate in school programs. I believe that the parents are most likely to participate when they see that involvement can help their child's

development. When teachers and parents have a positive relationship providing opportunities for communication, they can continue to search for meaningful ways to help the students' overall development.

The Relationship between the Project Approach and the Official Curriculum

Betty indicated that the project approach is related to the National Kindergarten Curriculum in Korea. As one of her assessment tools, she used a checklist during the map project. To assess her students' performance and work during a project, she made a checklist for each subject area including health, society, expression, language, and inquiry. The checklist had sub-areas, contents, and criteria under each subject area. When she decided upon the criterion in each subject area before beginning the map project, she referred to the contents of each subject area in the National Kindergarten Curriculum to meet the standards for children's development in each subject area.

According to Ministry of Education and Human Resources Development (1998), kindergarten education aims at the overall development of children and the basic skills and attitudes in children's daily lives. In particular, the goals of each subject area are to promote health of the mind and body, to help children to acquire basic living habits and cooperative attitudes toward others, to help them to creatively express their own thoughts and feelings, to promote the use of appropriate language, and to help them to solve problems in their daily lives (Ministry of Education and Human Resources Development). Most early childhood educators in Korea believe that the project approach, as an integrated teaching-learning method, is applicable to all components of the National Curriculum. In addition, the educators believe that children acquire basic skills and knowledge through their own experiences and that the integrated curriculum provides

many opportunities for children to explore the real world. Project work is informal and integrated. All project activities and work provided by teachers depend on children's interests related to a project's topic. For example, through project activities such as group discussions, field trips, and displays, children will be able to improve their inquiry ability and creative skills. Moreover, project activities promote children's intellectual and social development.

Teachers choosing a topic and organizing project activities need to consider the curriculum subject areas and the activities associated with them (Katz & Chard, 2000). In addition, during a project, teachers need to record children's individual and group activities, in order to assess whether they are meeting the projects' goals in terms of the contents of the curriculum. Teachers also need to assess children's learning progress and evaluate the children's achievement of project work, in order to determine how much the children have developed at the end of project work. At this time, the teachers are able to use a checklist as a developmentally appropriate assessment tool for each curriculum subject area.

The Korean Version of the Project Approach

The findings of this study indicate that kindergarten teachers need to define their own approach to the project work. As a child-centered teaching-learning method, the project approach has spread across Korea. However, this approach's background and framework are based on Western ideas and culture. Some aspects of the project approach are not suitable for Korean kindergarten and culture. For example, in a Korean kindergarten, children's academic abilities are emphasized by teachers as well as

children's parents, so the children's academic skills and achievement are important concerns for teachers using the project approach.

As I mentioned in Chapter 2, where I discussed 'the transfer of educational ideas,' it is time to elaborate a Korean version of project work. Project activities and work suitable for the Korean educational system and culture require a degree of reflection and theorizing that is not presently evident. First, the development of Korean project work requires early childhood educators to completely understand the theoretical backgrounds of the project approach and the framework of project work. Second, educators need to consider their own theoretical and cultural backgrounds in early childhood education. Third, educators need to reform the project approach so that it can be integrated into the National Kindergarten Curriculum. Finally, educators need to observe and evaluate how the project approach is working in the Korean educational system. If problems occur in the process of assimilating the project approach into the educational system, educators need to modify and re-apply this approach to the Korean educational system, followed by further assessment.

In order to apply the project approach at the level of the classroom, teachers must thoroughly understand this approach. Thus, they need to attend workshops, lectures, teacher-training programs, or seminars on the project approach to understand and apply it to their classrooms. Through these opportunities, the teachers will be able to reflect on different aspects of their project work and to develop their own projects. In addition, they will have an opportunity to learn how to keep project work integrated with the existing curriculum. As a result, they will be able to develop project work focused on the curriculum subject areas.

To integrate the project approach into the Korean educational system and Korean culture, parental involvement is also necessary. Parents' awareness of the project approach will aid its adoption in the classroom and will also help parents to participate positively in educational activities for their children. Moreover, the parents need to be collaborators in and supporters of effective curriculum management, and teachers need to engage parents in meaningful ways in their children's education.

Implications for Further Research and Practice

The findings of this study are based on the assessment practices of two kindergarten teachers using the project approach in Korea. However, the findings suggest directions for future research on the influence of assessment on children's development and learning in kindergarten and beyond. Two recommendations for areas of research are the use of children's drawings in project work and the transition to Grade One.

Children's Drawings

As one way of assessing children's performance and work on a project, Betty focuses on children's representational activities such as drawing and writing. In particular, she believes that drawing provides children with an important method to represent their ideas about a project's topic. For example, during project work in this study, children's drawings included the children's memories of experiences related to the topic, observations from field trips, and plans for the trips. However, the participants did not examine the deeper meaning and educational significance of children's drawings in project work. Further study of children's drawings in assessment practices could result in a more in-depth understanding of how children's drawings represent their ideas about a certain topic and how they can develop their learning.

The Relationship between Kindergarten Teachers and Grade One Teachers

In this study, the participants gathered information about children's existing knowledge by using assessment methods based on the G & T program, circle time, and conversations with children's parents. The teachers believe that when they understand each child's development level, they can effectively help individual children develop their abilities and skills. In her assessment practices, Betty makes two copies of a checklist to assess children's development levels. One is for the children's parents, and the other is for the children's future Grade One teacher. In so doing, Betty helps the future Grade One teacher to understand each child's stage of development and knowledge in each subject area. Further study of the relationship between kindergarten teachers and Grade One teachers could add to knowledge regarding assessment practices and help the Grade One teachers understand their students' development levels in each subject area. Moreover, this knowledge could be used to help children adapt themselves to new circumstances as they make the transition to Grade One.

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APPENDIX A

Interview Questions

Interview Questions

Before starting a project

- How do you determine the children's existing knowledge?
- Do you have information about or guidelines for assessment in the kindergarten?
- What forms of assessment are used for children's learning in your class?

During the project work

- In your class, what forms of assessment are used for children's learning in project work?
- Do you use different forms of assessment in the project approach and in other teaching-learning methods in your class? If yes, please explain in detail.
- In the project approach, what do you think is most important for assessing children's performance and work?
- How do you gather information on the children's performance and work?
- How is the children's performance linked with your curriculum objectives?
- When you write your daily notes or journal entry on the project work, what is your main concern related to the children's achievement?
- How will this information help you plan for the next project?

After finishing the project

- How is assessment of project work influenced by the need to evaluate learning in relation to the standards for each subject area in the National Kindergarten Curriculum?
- How will you share this information with the children's parents?
- How will you use this information for the next project or class activities for the children?

APPENDIX B

Evaluation Sheet for the Map Project (*Inquiry*)

Evaluation Sheet for the Map Project (*Inquiry*)

Area	Sub-area	Contents	Criteria	Grade
Inquiry	Scientific Inquiry	Taking an interest in tools and machines	1. Takes an interest in a compass	12345
			2. Finds a direction by using a compass	12345
			3. Uses a compass in daily life after investigating a street on a map	12345
	Logical-mathematical Inquiry	Understanding the basic concept of spaces and shapes	1. Understands up and down, the front and the rear, and left and right	12345
			2. Describes verbally the location and the direction of a specific place	12345
		Relating basic statistics to everyday situations	1. Collects familiar data and draws a picture or graph	12345
	Creative Inquiry	Taking an interest in and exploring one's surroundings	1. Takes an interest in streets in his or her surroundings	12345
			2. Visits a specific place in these surroundings by being able to understand directions	12345
		Thinking differently and creatively	1. Finds a specific place on a map and makes a plan to travel to this place	12345
			2. Investigates a map and makes own symbols on the map	12345

APPENDIX C

Checklist for the Map Project (*Inquiry*)

Checklist for the Map Project (*Inquiry*)

Name		**Age**		**Date**			
Title	Drawing a map	**Area**	Inquiry	**Activity**	Finding a direction by using a compass		
Contents	* Scientific inquiry: Taking an interest in tools and machines - Finds a directions with tools * Logical-mathematical Inquiry: Understanding the basic concept of spaces and shapes - Describes verbally the location and the direction of a specific place						
Topic	Map project – activity of inquiry (small-group activity)						
Material	Samples of project work (compass, map, records of activities)						
	Checklist				Yes	No	Notes
Criteria	1. Understands the function of a compass						
	2. Understands how to use a compass						
	3. Recognizes the direction pointed to by the red needle of a compass						
	4. Finds a place according to the direction while looking at the compass rose on a map						
	5. Finds a direction by using a compass in real life						
	6. Understands various directions when finding a specific place during a field trip						
Comments							

APPENDIX D

Information Letter to Teachers

Information Letter to Teachers

Researcher: Yeonwook Hwang, Department of Elementary Education, University of Alberta
Address:
E-mail:
Telephone:

Supervisor: Dr. Larry Prochner, Department of Elementary Education, University of Alberta, (780) 492-0890
Title: A Case Study of Assessment Practices and Beliefs of Teachers Employing the Project Approach in a Kindergarten in the Republic of Korea

Dear _____,
(name of teacher)

I am currently studying in order to complete my doctoral studies at the University of Alberta. I would like to request your participation in a research project that I am conducting on the assessment practices and beliefs of teachers employing the project approach in a kindergarten in the Republic of Korea. The University of Alberta requires that I must fully explain to you the details of the research, the terms of your involvement, and any expected risks and benefits before you sign the consent form and give your consent to participate. Your participation in this research is voluntary, and you may opt out of your participation or may withdraw from the research at any time without prejudice or penalty.

Purpose of the Research
This study will investigate the actual assessment methods used by teachers using the project approach in kindergartens in the Republic of Korea. In particular, this study will explore how these teachers assess students' performance in project work to support their development. An additional purpose is to improve understanding of assessment within the project approach in general.

Procedures
The research will be conducted by using the case study approach. In this research, two individual teachers using the project approach will be selected, studied and compared. I will also focus my research on the teachers' understanding and use of assessment in the project approach.
The data collection will occur during the course of a single project in each of two classrooms, by using observation, interviews, and a review of the teachers' anecdotal notes. This research will require interviews with each teacher. Your involvement in the research will include interviews in which we will talk about your assessment practices used in the project approach, and your understanding of how assessment is used in this approach. The informal interviews will take the form of ongoing discussions, but I will

steer them to your understanding of assessment in the project approach. I will interview you before the beginning of a project, during the project work, and after the completion of the project. The length of each interview will be negotiated with you.
I will also need to arrange times for regular visits so that I can observe in the classroom while you are involved in project work with your students. I will observe each teacher at least three times over the course of a project period. I will be a non-participant observer, so I will be removed from class activities, and my observations will occur from outside the ongoing project work.
I would also like to look at your anecdotal notes about individual students' learning and development in the project work, and I anticipate that we will be involved in informal conversations during the course of a project period. The number and length of conversations will be negotiated with you as the research unfolds. If you allow me to use your anecdotal notes as examples for this project's investigation of teachers' assessment of students' performance and work in project work, I will include some of your anecdotal notes in my final dissertation.

Potential Risks and Benefits
The potential risks associated with this research will involve the personal risks taken in interviews and conversations with me when answering some of the personal questions. No other risks are known to me at this time. I expect that you will find that your experience with this project affirms your professional practices and beliefs, and that the research findings will improve educational stakeholders' understanding of assessment in the project approach.

Anonymity and Confidentiality
All the data collected during the research will be secured and confidential. Anonymity and confidentiality will be maintained for all participants. I will use pseudonyms for all participants in this research. When the research is put into written form, your pseudonyms will be used in the text. I guarantee that your responses will be treated with confidentiality and that I will use a pseudonym when referring to you.

Thank you for considering this request. If at any time you have any questions or desire further information concerning this research, please contact me at
supervisor at (780) 492-0890.

Yours sincerely,

_____
Yeonwook Hwang

This study has been reviewed and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) 492-3751.

APPENDIX E

Information Letter to Parents

Information Letter to Parents

Researcher: Yeonwook Hwang, Department of Elementary Education, University of Alberta
Address:
E-mail:
Telephone:

Supervisor: Dr. Larry Prochner, Department of Elementary Education, University of Alberta, (780) 492-0890
Title: A Case Study of Assessment Practices and Beliefs of Teachers Employing the Project Approach in a Kindergarten in the Republic of Korea

Dear _____,
(name of parent)

I am a graduate student in the Department of Elementary Education at the University of Alberta. Currently, I am studying in order to complete my doctoral studies. I am conducting a research project on the assessment practices and beliefs of teachers employing the project approach in a kindergarten in the Republic of Korea. Before you sign the attached consent form and give your consent to participate, the University of Alberta requires that I must fully explain to you the details of the research, the terms of your child's involvement, and any expected risks and benefits.
_____(name of teacher), your child's classroom teacher, has agreed to participate in this research on the condition that permission is obtained from the parents of the students in his/her classroom. Therefore, I would like to explain the purpose and procedures of the research and how your child would be involved in it. Your child's participation in this research is entirely voluntary, and your child may opt out of participation or may withdraw from the research at any time without prejudice or penalty.

Purpose of the Research
This study will investigate the assessment methods used by teachers using the project approach in kindergartens in the Republic of Korea. In particular, this study will explore how these teachers assess students' performance in project work to support their development. An additional purpose is to improve understanding of assessment within the project approach in general.

Procedures
The research will be conducted by using the case study approach. In this research, two individual teachers implementing the project approach will be selected, studied and compared. I will also focus the research on the teachers' understanding and use of assessment in the project approach.
Your child's classroom teacher is one of the participants in this research. I will need to arrange times for regular visits so that I can observe in the classroom while the teachers

are involved in project work with their students. I will observe each teacher at least three times over the course of a project period. I will be a non-participant observer, so I will be removed from class activities, and my observations will occur from outside the ongoing project work. My observations will be focused on the teachers' assessment of students' performance and work in project work.
During observations, I will gather data by keeping field notes. The data collection will also occur during the course of a single project in each of two classrooms, by using observation, interviews, and a review of the teachers' anecdotal notes. In order to investigate the teachers' understanding of assessment in the project approach, I will use these notes to gather samples of the teachers' assessments of the children's performance and work in the project. As a result, the teacher's assessment of your child's performance and work in the project will be included in my final dissertation.
This research will require interviews with your child's classroom teacher. The interviews will ask the teachers about their assessment practices used in the project approach, and their understanding about how assessment is used in this approach. The informal interviews will take the form of ongoing discussions, but I will steer them to the teachers' understanding of assessment in the project approach. I will interview each teacher before the beginning of a project, during the project work, and after the completion of the project. The length of each interview will be negotiated with the teachers.

Anonymity and Confidentiality
All the data collected during the research will be secured and kept confidential. Anonymity and confidentiality will be maintained for all participants. I will use pseudonyms for all participants in this research. When the research is put into written form, a pseudonym will be used in the text to refer to your child. I guarantee that your child's responses will be treated with confidentiality.

Thank you for considering this request. If at any time you have any questions or desire further information concerning this research, please contact me at or my supervisor at (780) 492-0890.

Yours sincerely,

_____
Yeonwook Hwang

This study has been reviewed and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) 492-3751.

APPENDIX F

Information Letter to Students

Dear _____,
(name of student)

I am a graduate student in the Department of Elementary Education at the University of Alberta. Your classroom teacher has agreed to participate in a research project that I will be working over the course of a project period. I would like to have an opportunity to tell you about this research project.

This study will investigate the assessment methods used by teachers using the project approach in kindergartens in the Republic of Korea. In particular, this study will explore how these teachers assess students' performance in project work to support their development. An additional purpose is to improve understanding of assessment within the project approach in general.

In this research, two individual teachers implementing the project approach will be selected, studied and compared. I will also focus the research on the teachers' understanding and use of assessment in the project approach.

Your classroom teacher is one of the participants in this research. I will observe your teacher at least three times over the course of a project period. I will be a non-participant observer, so I will be removed from class activities, and my observations will occur from outside the ongoing project work. My observations will be focused on the teacher's assessment of students' performance and work in project work.

During observations, I will gather data by keeping field notes. The data collection will also occur during the course of a project, by using observation, interviews, and a review of the teachers' anecdotal notes. In order to investigate the teachers' understanding of assessment in the project approach, I will use these notes to gather samples of the teachers' assessments of the children's performance and work in the project. As a result, the teacher's assessment of your performance and work in the project will be included in my final dissertation.

All the data collected during the research will be secured and kept confidential. Anonymity and confidentiality will be maintained for all participants. I will use pseudonyms for all participants in this research. When the research is put into written form, a pseudonym will be used in the text to refer to you. I guarantee that your responses will be treated with confidentiality.

Thank you for allowing me to be part of your learning in project work.

Yours sincerely,

_____
Yeonwook Hwang

This study has been reviewed and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) 492-3751.

APPENDIX G

Research Consent Form for Teachers

University of Alberta

Research Consent Form
(Teachers)

I, _____, hereby consent to

- be observed by
- be interviewed by
- share my anecdotal notes with
- have communications with
- have email communication with

Yeonwook Hwang .

I understand that

- I may withdraw from the research at any time without penalty
- my participation is voluntary
- all information gathered will be treated confidentially and discussed only with your supervisor
- any information that identifies me will be destroyed upon completion of this research
- I will not be identifiable in any documents resulting from this research

I also understand that the results of this research will be used only in the following:

- research thesis
- presentations and written articles for other educators

I understand that I can withdraw my consent at any time without penalty by contacting Y. Hwang at (780) 988-8732 or email at yhwang@ualberta.ca.

_____
(signature)

Date signed: _____

This study has been reviewed and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) 492-3751.

APPENDIX H

Research Consent Form for Parents

University of Alberta

Research Consent Form
(Parents)

I, _____, hereby consent

for _____ to be

- observed
- asked to provide samples of his/her performance and work in project work in the teacher's anecdotal notes

by Yeonwook Hwang .

I understand that

- my child may withdraw from the research at any time without penalty
- my child's participation is voluntary
- all information gathered will be treated confidentially and discussed only with your supervisor
- any information that identifies my child will be destroyed upon completion of this research
- my child will not be identifiable in any documents resulting from this research

I also understand that the results of this research will be used only in the following:

- research thesis
- presentations and written articles for other educators

I understand that I can withdraw my consent at any time without penalty by contacting Y. Hwang at (780) 988-8732 or email at yhwang@ualberta.ca.

_____
(signature of parent)

Date signed: _____

This study has been reviewed and approved by the Faculties of Education and Extension Research Ethics Board (EE REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EE REB at (780) 492-3751.